ELECTRICAL WORLD *News Issue*

NOVEMBER 26, 1949

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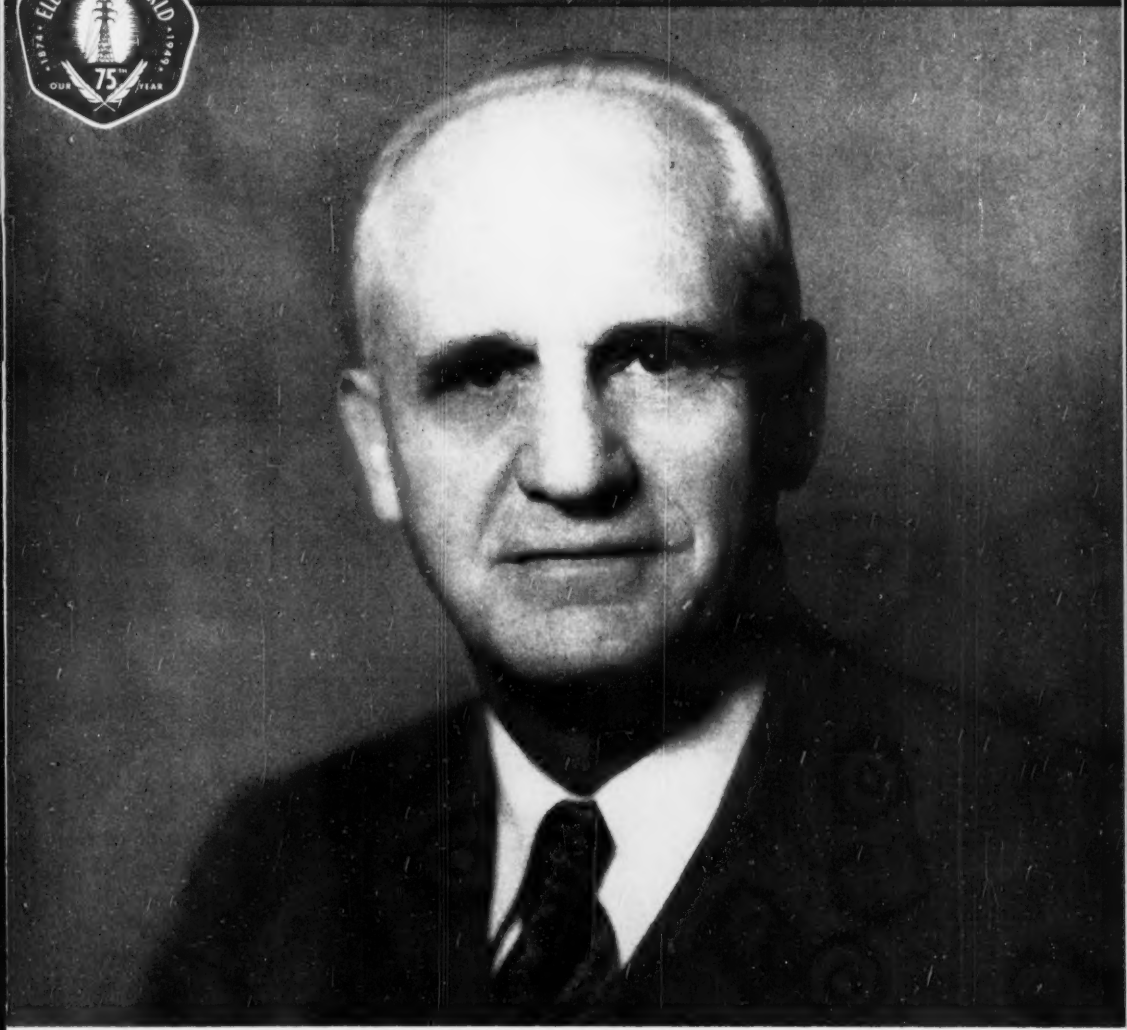


James M. Barry, New President of Alabama Power Co

WE STOPPED THEIR BREATHING TO PROLONG THEIR LIFE!

On large tanks, Nitrile rubber gasket of circular cross-section is compressed as shown. Ring welded to tank keeps gasket in place—prevents too much compression.
On small tanks, Nitrile rubber gasket of square cross-section is compressed between rim of cover and deep-rolled flange on tank. Shown uncompressed.

In G-E Spirakore® transformers, Nitrile rubber gaskets—unharmed by oil, age, or operating temperatures—effectively seal out atmospheric air, moisture, and other contamination—thereby greatly prolonging the life of the insulating oil and consequently the units themselves. By redesigning the tanks, covers, handholes, and gaskets, we've made this sealing possible *and improved accessibility!*

Some years back, we sealed our power transformers completely. Now we've done it with all liquid-immersed, distribution transformers. We've stopped their breathing, too. We've made sealed tank construction available in all General Electric Spirakore transformers—from the smallest to the largest.

Other Improvements

Yet sealed-tank construction is only one of the improvements you get with General Electric distribution transformers. You get Spirakore design—for great savings in size and weight. You get improved impulse strength. You even get a new and better baked synthetic-resin paint, which reduces maintenance costs.

Today—as ten years ago when lighter, smaller Spirakore transformers first made history Spirakore still leads the field. It's the finest distribution transformer we have ever made, the finest you can buy. Ask for Bulletins GEA-4885 and GEA-4521. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

Spirakore Transformers

GENERAL ELECTRIC

The Electrical Week

Texas Utilities Co will soon be an independent holding company with three rapidly growing operating subsidiaries . . . Good news for industries in the Northwest. Bonneville Power Administration has announced that it will not have to raise its wholesale power rates until 1954 . . . The Pacific Gas & Electric Co is ready to start its Kings River hydro project as soon as possible . . . SEC reports that the end is in sight on its long road to simplification and integration of public utility holding companies . . . And at Atlantic City the National Electrical Manufacturers Association paid tribute to three pioneers of the industry.

"Too many people are thinking of security instead of opportunity. They seem more afraid of life than of death." So says former Secretary of State James Byrnes, putting a finger on the heart of the "welfare state."

A 489-page volume entitled "Reclamation Project Data" gives historical, statistical, and technical information on 72 Bureau of Reclamation projects including 15 divisions of the Missouri Basin project. It's available at the Government Printing Office, Washington 25, D. C. The price is $4.

Behind the continued surge (over last year) of energy output in New England is the area's recovery from its recent business slump. All New England manufacturing except heavy machinery is reported picking up.

Wisconsin Power & Light Co is installing water heaters at the rate of 5,500 a year. Rural saturation now equals that of urban communities. Company saturation has reached 17%; before the war it was 4%.

Much publicity, little action surrounds a California official's plan for State takeover of the Central Valley Project. The legislature would have to approve financing and management plans; Congress would have to agree. No legislation is pending before either.

Key industries, including utilities, soon will be urged to build new plants at least three miles from other vital facilities. Objective: Scatter targets of possible atom bomb attacks. National Security Resources Board is backing idea.

Seattle City Light has discovered another source of revenue. A by-product of maintaining the right of way for its Skagit-Seattle transmission line is Christmas trees.

India's fabled vale of Kashmir is being electrified. A new $3-million, multi-purpose water project will provide 15,000 kw, enough power to electrify the whole Kashmir valley.

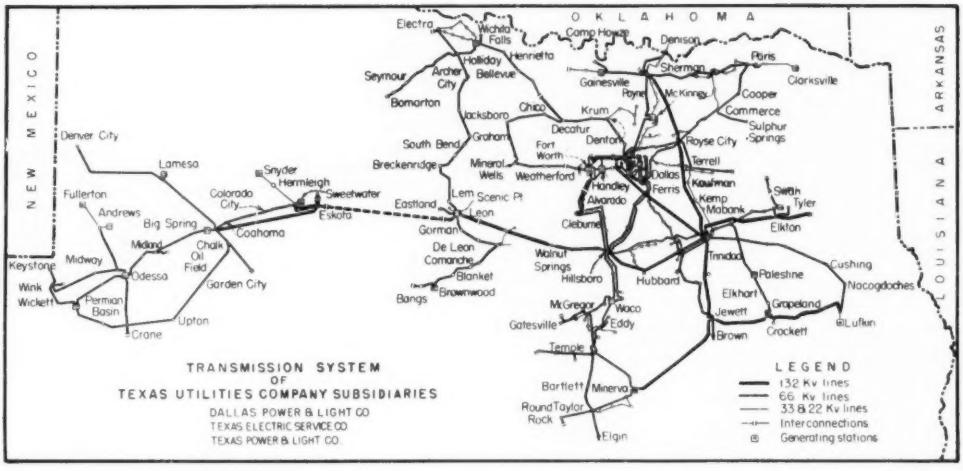
Ho-Hum Department—The McGraw-Hill World News correspondent in Czechoslovakia has been expelled.

Department of Commerce's latest figures show that electrical goods wholesalers reported a seasonal jump of 6% in sales over August. But the September figures were down 13% from a year ago, and this year's totals are down 7% from 1948.

The Bureau of Labor Statistics believes that jobs in engineering will increase by about 100,000 in the next decade.

Notes From The News

Construction of a $150-million, 60-cycle hydro plant on the Niagara River near the Queenston power house will begin as soon as a treaty for water diversion has been negotiated between Canada and the United States. The treaty is expected to come before Congress in January or February. The new plant of the Hydro-Electric Power Commission of Ontario will provide an additional 500,000 hp for Ontario . . . More than 20,000 visitors viewed Tallulah Falls gorge last summer, and 10,570 of them took the trip to the bottom on Georgia Power Co's incline railway. The utility provides free guided tours of its hydro plant at the canyon bottom . . . A bronze tablet in memory of the late Paul A. Schoellkopf, former president of Niagara Falls Power Co, was dedicated Nov 17 at the entrance to the company's Schoellkopf station . . . Gulf States Utilities Co, Beaumont, Tex., has instituted a program for giving all employees periodic physical examinations at company expense . . . A 15% cut in power supplies to the northern area of the Ontario Hydro-Electric Power Commission system went into effect Nov 21. It was made necessary by low water at generating stations in the north.



Texas Utilities Co to Be Independent

American Power & Light Co Disposes of its Holdings; 3-Company System Has Matched Service Area Growth; No Fight with Public Power Agencies

THE TEXAS UTILITIES CO will become an independent holding company within the next six months. Today it is the wholly owned subsidiary of American Power & Light Co. But the Securities and Exchange Commission has already approved the independence of TU. Only a favorable decision by a Federal Court in New York is needed to make the separation final.

Under the distribution plan approved by SEC, here is how the owners of AP&L stock would fare. For each share of $6 preferred, 2.231 shares of TU common; for each share of $5 preferred, 1.878 shares of TU common; for each share of common, 0.263 share of TU common. When this distribution is achieved, the new holding company will be nearly five years old but likely to be a healthy child for its age.

Texas Utilities Co was incorporated in September, 1945, under the laws of Texas. Its three subsidiaries are the Dallas Power & Light Co, Texas Electric Service Co, and Texas Power & Light Co. For years their lines have been interconnected (See map). The lines of Tesco connect with those of TP&L in the west, with those of DP&L in the east.

The substantial growth of Texas' population and industry has been reflected by the growth of the TU system. At the end of 1945, the system had 415,533 customers. At the end of July, 1949, the total was 553,000. Industrial customers rose from 5,567 to 8,301. Industrial sales rose from 950,475,000 kwhr in 1945 to 1,136,445,000 kwhr for the 12 months ended July 31, 1949.

Residential sales and usage increased even more. In 1945, residential sales were 329,528,000 kwhr and average annual consumption was 1,018 kwhr. For the 12 months ended July 31, 1949, the corresponding figures were 555,377,000 kwhr and 1,328 kwhr.

To serve this growing load, the TU subsidiaries have been adding capacity and plan to add more. Capability at present is 623,335 kw. Another 266,000 kw is under construction. Plans have been made to add another 190,500 kw. This would mean a total capability of 1,079,835 kw by the end of 1952. At the end of 1945, capability was only 409,740 kw.

Practically the entire generating system is steam. The fuel commonly used is natural gas, which is both cheap and abundant in Texas. The substitute fuel is oil, almost as cheap and abundant. The Trinidad Plant of TP&L once burned lignite. If necessary, it can burn it again. In nearby mines the company has reserves of an estimated 35 million tons.

It was this subsidiary which made history in April, 1947, when it signed an agreement with Southwestern Power Administration for the marketing of energy from Denison Dam. This contract contained the "wheeling" proviso that many persons believe should be included in all pacts between public power agencies and privately owned utilities.

The three subsidiaries have a record of working closely and in harmony with public power agencies, including the distribution cooperatives. TP&L is now purchasing 96,250 kw of firm capacity from the Lower Colorado River Authority (a Texas agency), SPA, and the Brazos River Transmission Electric Cooperative, Inc. At present the company is negotiating a new agreement with LCRA to replace the present one, which expires June 30, 1950.

The system has direct competition in nine small municipalities and in two small western oil fields where the lines overlap with those of a neighboring utility. No competitive municipal plant has been installed in a town served by the system in more than ten years.

Friendly relations are also maintained with neighboring business-managed companies. Actually a line leased from the West Texas Utilities Co (the line of dashes on the map between Sweetwater and Leon) makes possible the interconnection of the western and eastern sections of the TU system.

As always where there is progress under the free enterprise system, there has been a growing increase in capital-

ization. Combined capitalization of the subsidiaries rose from $132,845,316 at the end of 1945 to $212,705,809 on July 31, 1949. TU, as owner of 91.3% of DP&L and all of the other two companies, has also been receiving a constantly growing income. For 1946, the first full calendar year after its organization TU reported a net income of $4,198,372. For the 12 months ended July 31, 1949, net income was $6,183,721. And as any Texan can tell you, everything in Texas just keeps growing bigger and better.

•

Micro-Wave System Will Connect Northwest Grid

Communications will be speeded up for the Bonneville Power Administration by installation of a micro-wave system to link points in the Pacific Northwest Power grid.

First installation in the system, a 100-ft steel tower at Snohomish, Wash., has been energized. From Snohomish the ultra-short radio waves will be beamed to Squaw Mountain, near Issaquah, Wash., where a repeater station atop the mountain will relay to Seattle, Olympia, and Kent.

Next year the system will be extended to the J. D. Ross substation at Vancouver, Wash., and later to Grand Coulee and on into Montana. Five years will be required to cover the entire main grid.

Cost of the installation will be about $3 million. Equipment for the first unit, between Snohomish and Vancouver, will cost some $500,000. Bids will be opened Dec 20 for a 26-station network reaching from Vancouver to Spokane, via Grand Coulee Dam.

The network will be used for both voice transmission and facsimile transmission of message, pictures, and diagrams. It will automatically check circuit openings by means of telemeter systems at the substations. The system also will be useful in communication with construction crews.

From an economy standpoint, Bonneville officials believe the installation will be a good investment as it will greatly reduce long distance costs as well as bring savings through speedups. Better service for the entire Northwest will also be assured.

BPA Won't Raise Rates Till 1954; Higher Costs May Force It Then

Bonneville Power Administration's wholesale power rate of $17.50 a kilowatt-year will be continued another five years. After that, a rate hike may be necessary to meet today's increased costs, Administrator Paul J. Raver indicated last week in announcing results of BPA's five-year rate review.

Bonneville's present wholesale rates will continue in effect until Dec 20, 1954, Raver said. Higher construction costs for eight power dams to be added during the next five years will not be "a serious factor" until 1953, he explained.

Eight Dams Due by '54

By June 30, 1954, the eight new projects will be in operation. They are McNary, Hungry Horse, Albeni Falls, Roza, Chandler, Detroit, Big Cliff, and Hills Creek.

"Construction costs of the new projects as well as of transmission facilities are substantially higher than for Bonneville and Grand Coulee, built largely on the basis of prewar prices," Raver said.

Because amortization of the new projects will not figure in BPA's costs until they start operation, present rates will cover all generation and transmission expenses until about mid-'53, it was estimated.

Here's the way BPA figures its finances for the next five years:

Annual Revenues to Jump

Revenues will jump from an estimated $29 million for the current fiscal year, ending next June 30, to some $43.6 million in fiscal '54. Operating costs will go from about $22 million for the current fiscal year to $46.5 million in the year ending June 30, 1954. Meanwhile, by the end of fiscal '53, cumulative net surpluses of $41 million will have been built up, more than covering the expected excess of costs over revenues for the final year of the five-year period.

In announcing continuation of the $17.50-rate, the BPA Administrator declared the action would "give added stability to the Pacific Northwest economy." But unless present trends are reversed or there is new Congressional action on power cost allocation, he said, the next rate review, in 1954, may mean higher rates for Bonneville customers.

BPA's look into the future was made on the heels of an independent audit which confirmed new record high power sales and net revenues for the fiscal year ended June 30, 1949 (EW, Sept 3, p16). The audit by a Seattle accounting firm showed fiscal 1949 gross operating revenues of $27,821,000, a jump of nearly $3.3 million over the previous year's. Net operating revenue, after all costs, was $10.6 million.

BPA power revenues came from the following sources: industries, including military establishments, 50.18%; privately owned utilities, 27.88%; publicly owned utilities, 21.18%; miscellaneous, 0.76%. Dollarwise, sales to industry and military consumers jumped $1,592,040; sales to publicly owned utilities increased by $1,575,316, and to private utilities were up only $123,250.

Fiscal 1949 operations left the government with gross investment in power at Grand Coulee and Bonneville Dams and in transmission systems of $457 million, with $149 million repaid and $308 million to be returned from future power operations.

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BPA to Serve New Co-op

A 20-year contract for delivery of Bonneville Power Administration power has been signed by the new Columbia Power Cooperative Association, which will serve rural areas south of Pendleton and Hermiston in Oregon. BPA energy will be delivered at Ukiah, Long Creek, and Kinzua over 150 miles of proposed 66-kva transmission lines connecting with Bonneville's existing facilities at Pendleton and Ione. Under the contract BPA agrees to serve the entire power needs of the co-op, until Hungry Horse Dam or some other federal facility comes into operation, but the commitment is reduced to zero in case of minimum Columbia River flow.

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TOMLINSON FORT, left, PCEA meeting speaker, was introduced by President I. W. Borda

Engineering Subjects Emphasized at Meeting of Pacific Coast Group

STUDIES OF distribution voltages for the Pacific Gas & Electric Co system indicate that regardless of load density 12 kv is the most economical in the overall picture. This opinion was expressed by R. R. Cowles at the annual fall conference of the Pacific Coast Electrical Association, Nov 17-18, at Fresno, Calif.

Change in the spread between costs of 4-kv and 12-kv transformers and increased average transformer size per customer were two factors he cited as influencing his opinion. Since economic considerations rule out an immediate complete cutover, he recommended such intermediate means as constructing rural lines with 12-kv framing, encircling small towns with 12-kv circuits, and cutting over sections where it is found that increased capacity is required.

Better cooperation between line supervision and the personnel department was shown to be to their mutual benefit by A. R. Bailey, Coast Counties Gas & Electric Co. In outlining the organization and functions of the personnel department he emphasized how line supervisors could help in setting up job descriptions, recruitment, training, and particularly in picking out misfits before they had built up a substantial service record.

Economic justification was the yardstick proposed by Tomlinson Fort, Westinghouse manager of apparatus sales, to determine which projects to preserve our natural resources should be carried forward first. Simple "conservation," he said, should not serve as a shield to protect any venture from the application of cost factors and other economic facts of life.

Annual helicopter patrol of all transmission lines in each division is required of each division superintendent of the Southern California Edison Co, C. W. Sanders reported. In two or three days the superintendent can have first-hand knowledge of new construction, area growth, and other factors affecting the operations of his division. Limited gas supply and occasional lack of availability for casual or emergency assignment were listed by G. A. Peers, Pacific Gas & Electric Co, as the chief drawbacks of helicopter use.

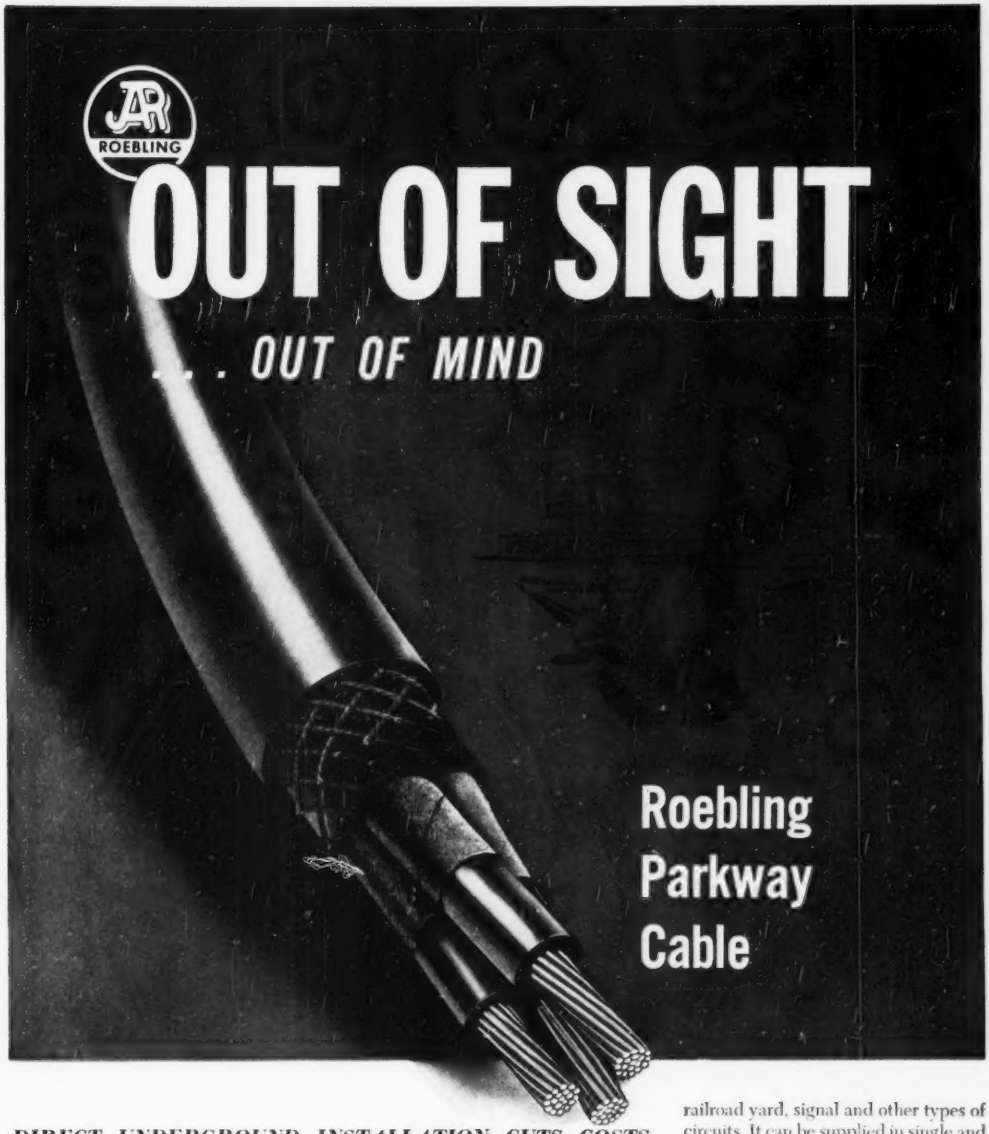
Amortization over a 20-year period of trenching, backfill, and other nonrecoverable costs of direct burial of cable for underground installation in residential areas may more than offset a lower first cost compared to installation in ducts. R. C. Blankenburg, Southern California Edison, asserted that in addition to such advantages as allowing for increased capacity, the 50-year amortization of a duct installation may actually give a lower annual cost.

Julius C. Meier, W. N. Matthews Corp, said that a 3-shot fuse recloser will provide better than 90% of the effectiveness of a pole top oil circuit recloser at 50% of the cost, while a 2-shot fuse recloser will give 65% effectiveness at 40% of the cost.

After setting up a routine whereby they accept complaints of television interference only through authorized dealers or service agencies, Southern California Edison still finds only about 5% of the complaints are actually its direct responsibility. C. R. Nickerl, leader of a discussion group on television interference, told the conference that the company found faulty bonding or hardware on transmission circuits to be one of the most common sources of trouble.

Adaptation of automotive equipment to line maintenance can go far in offsetting present high labor rates and the difficulty of obtaining experienced or qualified workmen, E. W. Templin, Los Angeles Department of Water & Power, said.

VISITORS at Wisconsin Utilities Association Electric Research Farm inspect a model of it. University of Wisconsin is using farm for research to show value of electrical equipment



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YOU AVOID ALL THE EXPENSE of underground duct systems with Roebling Parkway Cable. It's laid directly in an economical two- or three-foot trench. And as soon as it's out of sight, your problems are over. Wind and weather can't bring service troubles . . . metallic armor or a non-metallic Roeprene sheath assures safe physical protection.

Roebling Parkway Cable is being widely adopted for series street lighting, parkway boulevard lighting, traffic signal, fire alarm, flood lighting, railroad yard, signal and other types of circuits. It can be supplied in single and multiple conductor types—either solid or stranded—in a range from 600 to 5000 volts.

Have your Roebling distributor or Roebling branch office help select the best cable for your special needs. John A. Roebling's Sons Company, Trenton 2, New Jersey.

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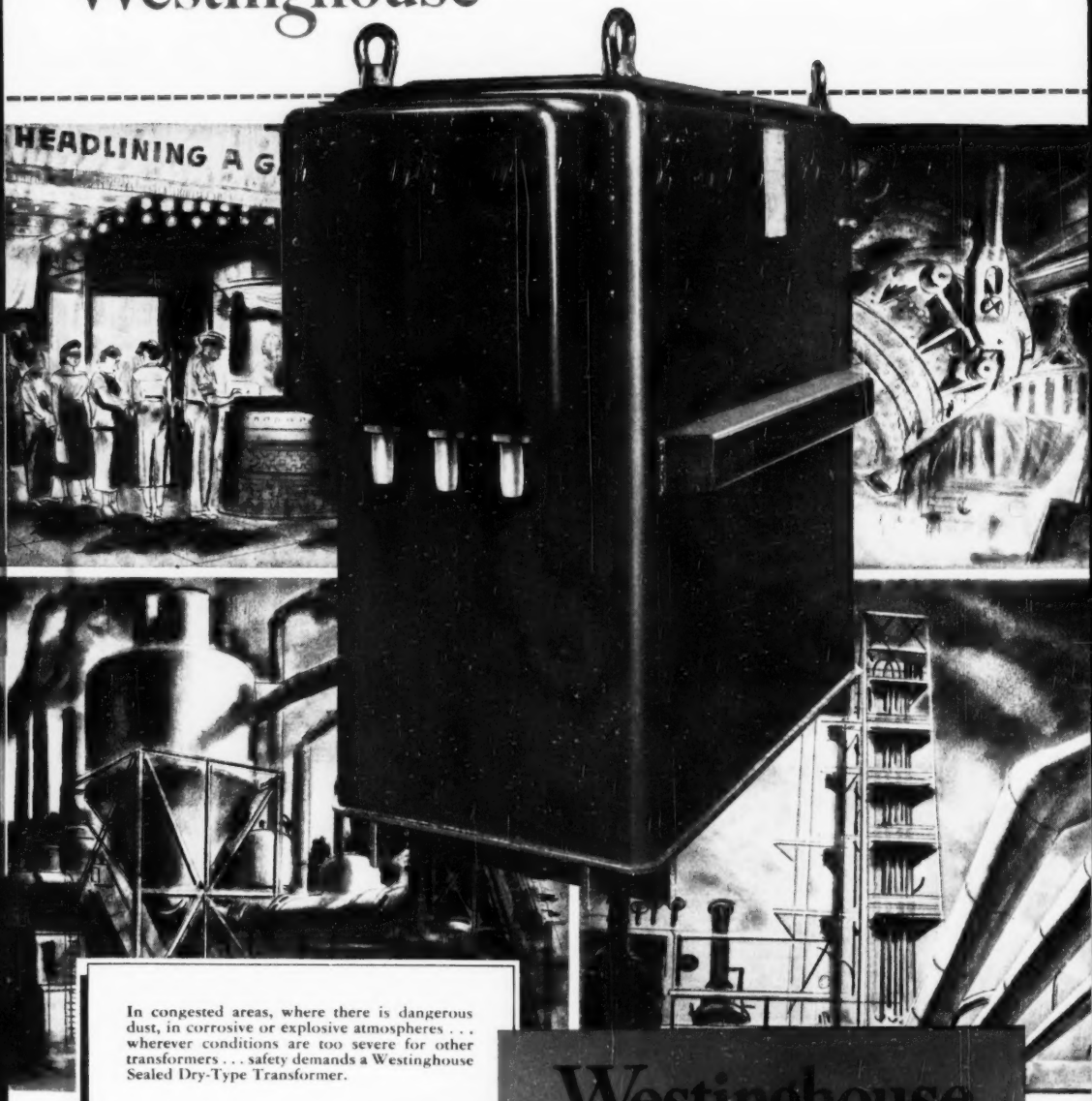

In congested areas, where there is dangerous dust, in corrosive or explosive atmospheres . . . wherever conditions are too severe for other transformers . . . safety demands a Westinghouse Sealed Dry-Type Transformer.

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Safest Transformer Ever Built and it *Saves Money*, too!

Safe against fire and explosion hazards! Safe against submersion or hazardous dusts.

The Westinghouse Sealed Dry-Type Transformer is constructed with Class H insulation. Insulating materials consist of glass tubes and barriers, porcelain spacers, Fiberglas* and silicone varnish . . . in an atmosphere of dry nitrogen.

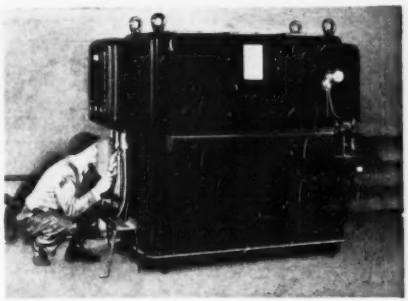
It Saves Money Three Ways

1. **No Vault to Build.** Because of its safety features, the Westinghouse Sealed Dry-Type Transformer may be installed anywhere without a vault or protective barriers. Reduces installation costs; minimizes maintenance time.
2. **No Liquids.** No storing, testing, filtering or reconditioning. No seepage or smudge.
3. **No Accessories for Liquids.** Devices such as valves, cooling units and gauges are eliminated, effecting economy in space and maintenance, improving appearance.

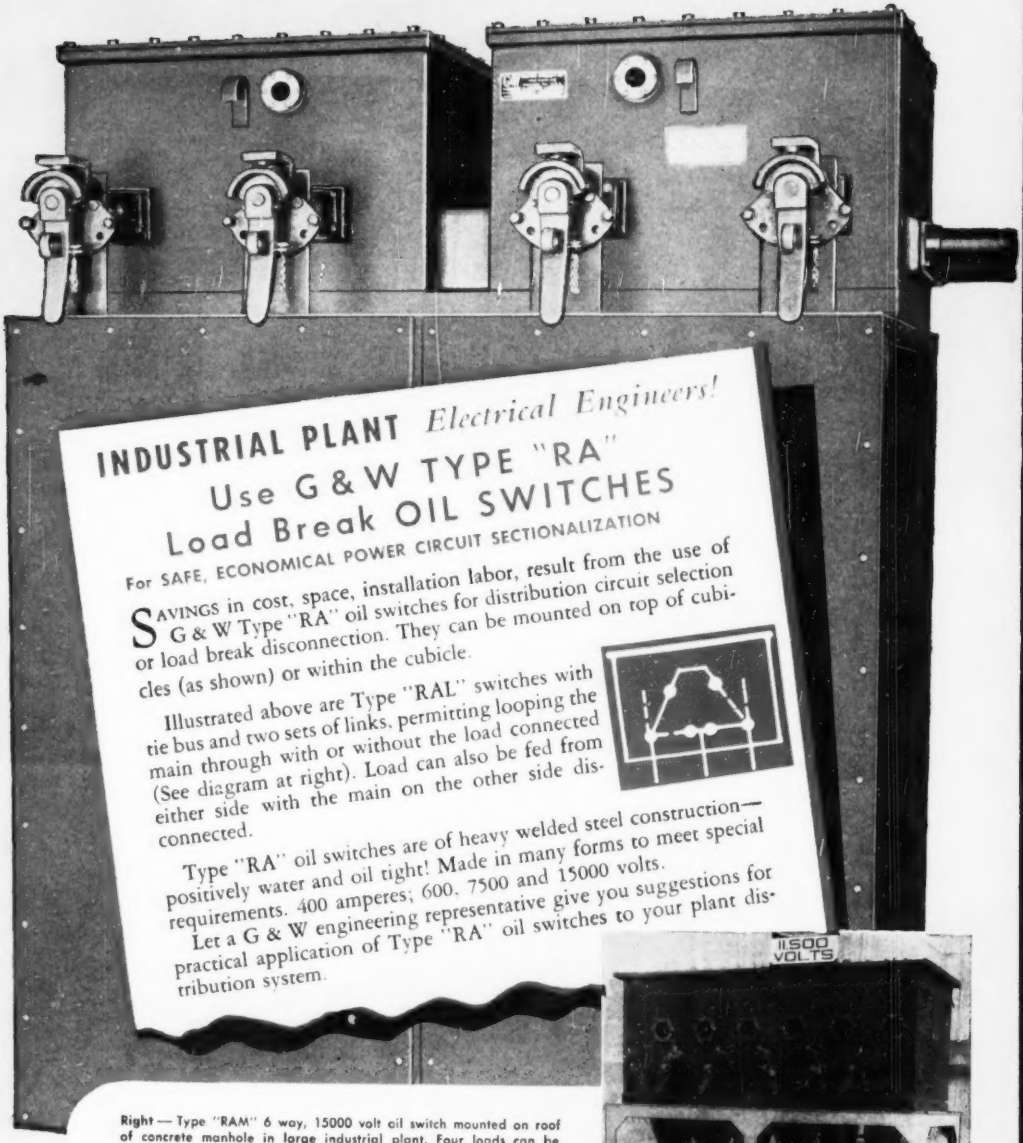
*T. M. Reg. O-C-F Corp.

For complete reliability, economy and cleanliness—*greater safety at greater savings*—install Westinghouse Sealed Dry-Type Transformers. Get an unbiased recommendation from the man who sells all types of transformers, your Westinghouse representative. Or write Westinghouse Electric Corp., Transformer Division, Sharon, Pa.

J-70546



A recent sealed dry-type installation of a network transformer in the basement of a large theatre in Pittsburgh. Westinghouse's first Sealed Dry-Type Transformer has been in successful operation since 1943 in New York City.



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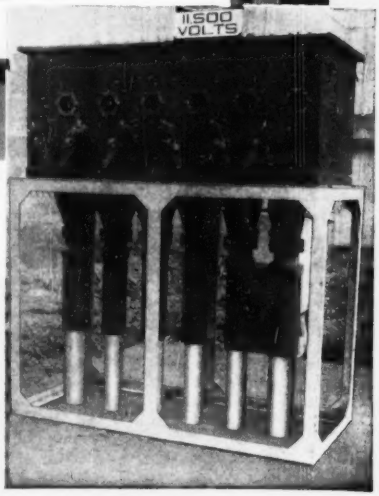
For SAFE, ECONOMICAL POWER CIRCUIT SECTIONALIZATION

SAVINGS in cost, space, installation labor, result from the use of G & W Type "RA" oil switches for distribution circuit selection or load break disconnection. They can be mounted on top of cubicles (as shown) or within the cubicle.

Illustrated above are Type "RAL" switches with tie bus and two sets of links, permitting looping the main through with or without the load connected (See diagram at right). Load can also be fed from either side with the main on the other side disconnected.

Type "RA" oil switches are of heavy welded steel construction—positively water and oil tight! Made in many forms to meet special requirements. 400 amperes; 600, 7500 and 15000 volts.

Let a G & W engineering representative give you suggestions for practical application of Type "RA" oil switches to your plant distribution system.



Right — Type "RAM" 6 way, 15000 volt oil switch mounted on roof of concrete manhole in large industrial plant. Four loads can be isolated independently and loop circuit sectionalized by operating external levers.

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***In Canada*—POWERLITE DEVICES, LTD., Toronto**

J. H. McCAMBRIDGE, left, general manager, Burbank Public Service Department, who has succeeded G. A. Baxter, secretary, Public Utilities Board, Alameda, as CMUA president

Quit Ripping Up Streets or Face Higher Costs

Plan your construction work for minimum practicable interference with surface traffic or face the threat of restrictive, cost-increasing legislation. These alternatives were presented by G. C. Sopp, Los Angeles Department of Water & Power, to members of the California Municipal Utilities Association at their annual meeting, Nov 16-18, at Santa Cruz.

Utilities using the public streets must realize, he said, that the public is not only entitled to protection from excavations, open manholes, and essential equipment, but also to a minimum interruption of normal traffic flow during construction. Otherwise the utility may be required to do such work during periods of light traffic—nights or weekends—which means overtime pay and generally higher costs. He presented and described a manual developed and widely used by all agencies in the Los Angeles area as a standard and guide in planning and carrying out work in the streets.

A statement of policy of the newly formed National Water Committee of the American Public Power Association was presented by Samuel B. Morris, APPA president. The committee advocates rates on hydroelectric energy generated in publicly owned and operated plants sufficient to recover all costs directly attributable to the power facilities installed, a policy not always followed in the past.

Bulb Snatcher Has 20,000—But No Home for Them

Twenty thousand light bulbs and no place to keep them—that's the problem of Charles B. Sero, of Detroit, champion bulb snatcher.

Sero, who has been collecting bulbs for 46 years, would like to put them in an Edison Palace of Light, where each could be displayed with the name of the inventor and an explanation of the materials used. "I want the collection to be used in an educational way," he says.

His bulbs range from tiny surgical "grain of wheat" lamps to a 400-w high-intensity lamp built experimentally for the torch of the Statue of Liberty. Included are a bulb from the battleship Maine, which was sunk in 1898; one from the bomb bay of the Enola Gay, the plane that dropped the bomb on Hiroshima; one from Hitler's limousine; and the dial light from Heinrich Himmler's radio. The strangest item, he says, is an ordinary 25-w lamp whose wire killed a cow. The bulb was found burning in the cow's mouth.

Sero gets many donations through the mail from persons who have heard about his collection; other bulbs he picks up himself.

PG&E Plans Early Start on Kings River Project

Construction on the $60-million Kings River hydro project, approved for Pacific Gas & Electric Co development in an early-November FPC decision, will start "as soon as possible" next year.

The PG&E project will include three new hydro plants and the expansion of a fourth to develop about 275,000 kw in new capacity, and three new dams, and the enlargement of a fourth.

The four hydro plants will stair-step down Helms Creek to the north fork of the Kings River. The lowest plant on the system, Kings River, will discharge directly into the reservoir of Pine Flat Dam, now under construction by the Corps of Engineers.

Activation of power facilities on the upper water shed must await completion of Pine Flat, scheduled for 1954, to reregulate stream flow.

The highest plant will be the A. E. Wishon powerhouse, with a 15,000-kw capacity. Below it will be the Haas plant, about 120,000 kw; the Balch expansion, increasing capacity from 30,000 to about 130,000 kw, and the Kings River plant, 45,000 kw.

The Haas plant will have a 2,230-ft head. The existing Balch plant has a head of 2,336 ft, one of the five highest in the country.

Shift to Rock Fill Dams

Two of the three new dams will be rock fill, a departure from past practice in high altitude dams in California. Utilities have favored thin slab dams because of the high cost of hauling materials into the mountains. However, frost action in the thin slab dams has caused a considerable maintenance problem.

PG&E has not built a rock fill dam since the completion in 1932 of Salt Springs Dam on the Mokelumne, 350 ft high and the largest rock fill in the United States. Salt Springs has been highly satisfactory in operation, and the utility is now making plans to go to rock fill dams for all high altitude work.

The Bear River Dam on the upper Mokelumne, on which construction will begin early next spring, also will be rock fill.

The two rock fills will be Helms Dam, 290 ft high and with a 940-ft crest, storing 102,500 acre ft, and Wishon Dam, 260 ft high, with a 3,760-ft crest, storing 128,300 acre ft.

A third dam, at Haas diversion reservoir, will be a concrete arch structure 60 ft high. Balch afterbay dam will be raised 32 ft to a height of 158 ft.

3 Pioneer Electrical Manufacturers Get 50-Year Awards from NEMA

THE VISION of three of the electrical manufacturing industry's outstanding pioneers was praised last week as the National Electrical Manufacturers Association presented them with 50-year certificates. The presentation was made at a luncheon at the annual meeting of NEMA at Atlantic City.

B. W. Clark, NEMA president and vice-president of Westinghouse Electric Corp. in making the presentation speech, said that 50 years ago few people had such a vision of the part electricity was to play in making this nation the wonder of industrialization and production it has become.

C. T. LAWSON left, new president of NEMA, receives the congratulations of his predecessor, B. W. Clark

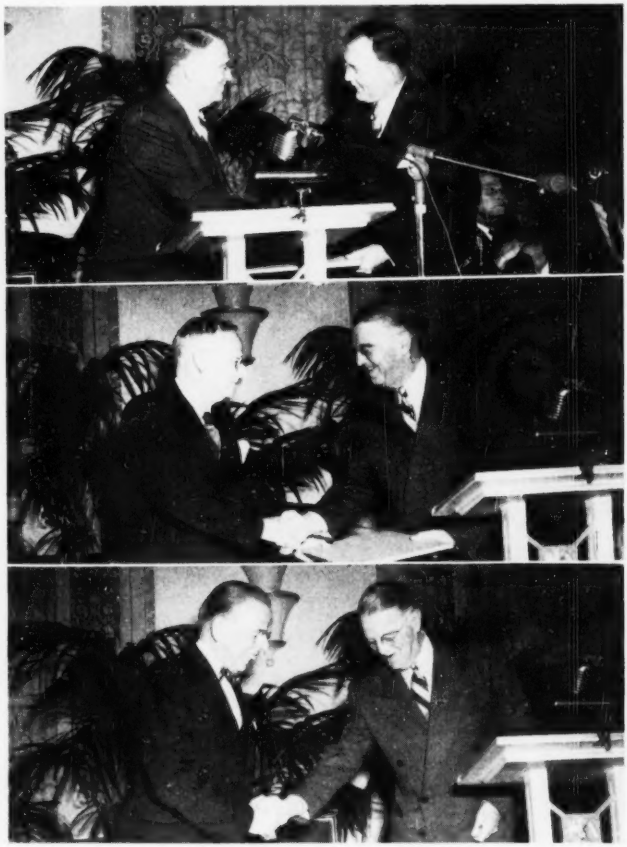
The recipients were Claude L. Matthews, president of W. N. Matthews Corp, St. Louis; Charles E. Wilson, president of General Electric Co, Schenectady; and Fay Woodmansee, president of Engineers Equipment Co, Melrose Park, Ill.

Clark was presented with an engraved bowl as the retiring president of NEMA. He also announced his retirement from active business during this meeting.

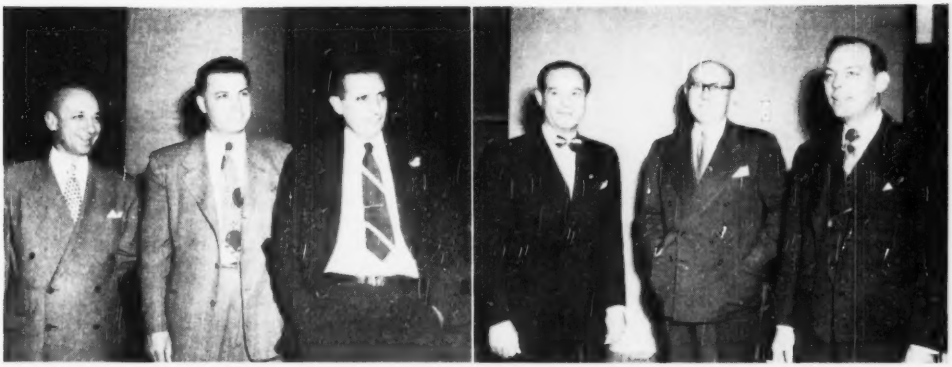
C. T. Lawson, vice-president in charge of sales, Kelvinator Division, Nash-Kelvinator Corp, Detroit, was elected NEMA president. Other officers elected were vice-presidents, C. W. Higbee, manager, Electrical Wire & Cable Department, U. S. Rubber Co, New York; J. W. Jewell, vice-president, Westinghouse Electric Corp, Pittsburgh; James F. Lincoln, president, Lincoln Electric Co, Cleveland; E. E. Potter, vice-president, General Electric Co, New York; A. F. Sheldon, vice-president and general manager, Kennecott Wire & Cable Co, Phillipsdale, R. I.; treasurer, Everett Morss, president and treasurer, Simplex Wire & Cable Co, Cambridge, Mass.

Only through private industry can the American people attain the increased production and the standard of living they are seeking, said R. C. Cox, president of Carnegie-Illinois Steel Co, in addressing the luncheon meeting. He maintained that the solution to any unemployment problem which may arise and to the problem of increasing the standard of living is the judicious and progressive investment of private capital in private industry, thus providing for new enterprises and for the expansion of existing ones with the attendant job creation and added production.

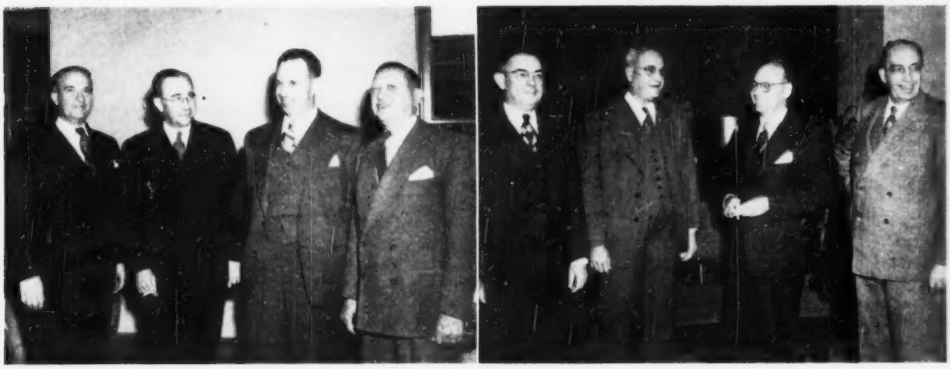
NEMA's "Go All-Electric" program is "going strong," but the campaign will be continued in order to arouse power suppliers to the inroads being made in their revenue by LP gas. J. Rushton, chairman of a subcommittee on competitive fuels, reported. He said that one third of the farm and rural small-town market has already been lost to bottled gas. His figures showed that bottled gas appliances are in use in 5.5 million homes in the lucrative rural territory and that power suppliers, between 1943 and 1949, lost an estimated $104,625,000 in revenue to the bottled gas industry, in addition to electric appliance industry losses.



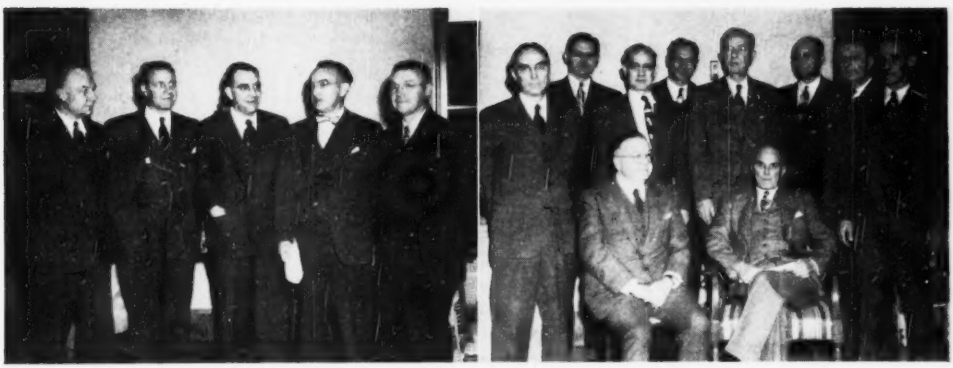
NEMA 50-YEAR AWARDS were presented by President B. W. Clark to Charles E. Wilson, right, top panel; Fay Woodmansee, left, center panel and Claude L. Matthews, left, bottom panel



NEMA MEETING at Atlantic City brought together representatives of most companies supplying electric utilities. Some of these representatives are pictured on this page. In left panel, R. G. Bellezza, Locke, Inc; G. E. Heberlein, Railway & Industrial Engineering Co; W. Scott Hill, Locke, Inc. In right panel are W. T. Pyle, Westinghouse Electric Corp; N. A. Toalson and L. J. Linde, Line Material Co



H. H. WEBER, U. S. Rubber Co; W. R. Swoish, Pennsylvania Transformer Co; A. Van Ryan and A. G. Steinmayer, Line Material Co. In right panel are R. E. Murphy, ITE; W. H. Burleson, Ohio Brass Co; J. H. Patton, Sangamo Electric Co; W. H. McCauley, Railway & Industrial Engineering



GENERAL ELECTRIC group in left panel consists of W. J. Rudge, Jr, G. F. Lincks, W. J. McLachean, R. C. Sogge, and C. W. Falls. Allis-Chalmers Manufacturing Co group in right panel consists of R. T. Stafford and R. J. Neagle, seated; R. W. Beard, R. N. Caspar, J. B. Hodtum, F. W. Bush, R. F. Fleshiem, J. D. Greensward, G. W. O'Keeffe, and C. D. Ainsworth, standing

Holding Company Act Enforcement Nearing Completion, SEC Reports

THE END IS in sight on Securities and Exchange Commission's long road toward simplification and integration of public utility holding company systems.

Only 642 companies (72 holding, 274 electric and gas utilities, and 296 non-utility) were still subject to SEC jurisdiction under the Holding Company Act on June 30, 1949—out of 2,152 companies (210 holding, 918 electric and gas, and 1,024 non-utility) that had come under the terms of the act at one time or other since June 15, 1938. Of the 1,510 companies eliminated from Commission jurisdiction, 157 had been exempted from the Act by Commission rule or order and the others by sales, dissolutions, mergers, consolidations, and divestments.

So SEC told Congress recently in a report on its trusteeship under the Public Holding Company Act of 1935. The information had been requested by a House subcommittee investigating monopoly power.

SEC said "very substantial progress" had been made in the utility industry's compliance with the statute. Between Dec 31, 1935, and June 30, 1949, 661 companies with assets of $7,965 million were removed from Commission jurisdiction through divestment, it reported. During the last fiscal year alone holding companies divested themselves of 44 companies with assets of $1,749 million.

In addition, 206 companies with assets of $3,781 million were divested by one or more holding companies but remain subject to the act because of their relationship to other registered holding companies. SEC expects to retain power over certain financial transactions and practices of most of these.

Other large reorganizations, for which figures have not yet been compiled, have been made since the end of the fiscal year. Electric Power & Light Co's plan was consummated in July, Commonwealth & Southern Co's early in November, and American Power & Light's has been approved and now is pending in the courts.

Some $6 or $7 billion of assets will remain in holding company systems under SEC regulation after integration has been completed, the Commission estimated, pointing out that the Act did not call for elimination of all holding companies but only for their reorganization into integrated systems.

This progress has not been made without "extensive litigation," SEC pointed out. Altogether administration of the Act up to June 30 had taken the Commission into court in 246 proceedings, of which 234 had been settled by that date. Most of the earlier litigation involved attempts to prevent or delay enforcement of the act. Now the emphasis is on the "delicate problems involved in carrying out large and complex corporate reorganizations in the midst of shifting economic conditions, without injury to investors." As of June 30, the Commission had instituted 85 court proceedings to enforce voluntary plans, and 80 had resulted in enforcement orders. Appeals had been taken from 19 enforcement orders, and the SEC had won in every case.

All this has been done without demoralizing the utility securities market or hurting the companies' financial position, SEC declared. In fact, it claimed partial credit for the industry's improved financial position during the past several years, though not denying the effect of a better general economic climate.

To emphasize its point SEC compared the market value of outstanding securities of Commonwealth & Southern Corp (see table) and two other large holding company systems that have undergone drastic reorganization. For comparison it picked the date the Act became effective (Aug 26, 1935), the date when the company registered, and a recent date this year. The figures used for market value of outstanding securities on the second two dates include (1) the amounts of cash distributions of capital to holders of such securities, (2) the market values, as of the dates shown, of other securities so distributed, and (3) amounts paid to security holders in the exercise of warrants and rights.

On this basis it found the market value of Commonwealth & Southern Co's securities had risen 117.3%, of Electric Power & Light's 439.4%, and Engineers Public Service's 478.7%. Although figures for other companies or the industry as a whole were not compiled, they would "differ only in the degree of improvement shown," SEC said.

The Commonwealth & Southern Corporation

Security	Market Value and Percent of Change From August 26, 1935				
	Aug. 26, 1935	Mar. 28, 1938	%	Oct. 11, 1949	%
6% Bonds, due 1950	$5,614,222	$4,806,060	14.4	$5,978,968[a]	6.5
5½% Bonds, due 1959	7,058,261	5,895,250	17.5	8,137,500[a]	15.3
6% Bonds, due 2025	35,555,033	29,605,203	16.7	42,224,600[a]	18.8
$6 Preferred Stock	78,750,000	43,500,000	44.8	166,090,416[b]	110.9
Common Stock	58,928,324	37,882,494	35.7	192,232,623[c]	226.2
Option Warrants	4,947,773	2,749,154	44.4	.....	.....
Total Securities	$190,853,613	$124,368,161	34.8	$414,664,107[d]	117.3
Dow Jones Utilities Average	25.46	16.11	36.7	38.02	49.3
Dow Jones Industrials Average	128.59	107.25	16.9	186.74	44.8
Dow Jones Railroads Average	35.72	20.46	42.7	49.77	39.3

[a] Cash received in retirement of securities 1940 to 1941.
[b] Cash and market value of securities received. 58,753 shares of preferred were purchased by the company between 1943 and 1949 for a total consideration of $5,949,840. This amount is included in the $166,090,416.
[c] Market value of securities received.
[d] Cash and market value of securities received.

FINANCIAL BRIEFS

The Maryland Public Service Commission has declined to interfere with Consolidated Gas, Electric Light & Power Co's plans for private sale of $20 million in refunding bonds. Halsey, Stuart & Co. Inc. Chicago investment bankers, had asked the Commission to order competitive bidding, saying the company could "effect a saving" thereby. The Commission said it had no authority to become the Baltimore utility's financial manager. The 35-year, first refunding mortgage sinking fund bonds, carrying 2¾% coupon, will be sold to several institutional investors. The Commission also authorized issuance of $76,660,000 of bonds, to be offered to owners of two Consolidated series in exchange for their present holdings.

Purchase of Louisville Transmission Corp by Louisville Gas & Electric Co has been approved by Federal Power Commission.

A plan to simplify Central Public Utility Corp's corporate structure has been placed before SEC. Consolidated Electric & Gas Co would be merged into the parent company and dissolved. The plan also provides for the redistribution of Central Public Utility voting power among security holders and for reclassification of its outstanding capital stock into a single class of common.

Have you seen L-M's latest street lighting development?

the revolutionary new

AUTOLATCH

...the first truly automatic pressure latch!

No gaskets! yet it's bug-proof and water-tight

Service from the ground! any standard hook stick will work

Trouble-free maintenance! Autolatch cuts your lamp maintenance time and costs

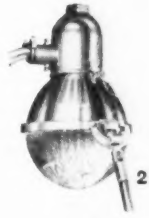
Now on the L-M Spherolite ... soon on Spherolite Jr.

At no increase in price!

L-M's revolutionary new Autolatch provides a minimum of 40 pounds pressure to hold glassware tightly to the reflector. Spring pressure on both latch and hinge sides. Uniformly smooth-surfaced glassware edge fits tightly against machined reflector edge. Bugs, dust, and water stay out. Yet the latch is easy to open. To close, you just swing the glassware back up, and the Autolatch snaps shut—tight.

The Autolatch is just another advantage of L-M's highly efficient Spherolite Luminaire. For complete details of Spherolite, its adaptability to either incandescent or mercury vapor, and the Autolatch, ask the L-M Field Engineer or write Street Lighting Division, Line Material Co., Milwaukee 1, Wisconsin.

1



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3

1. Front view of the revolutionary new Autolatch. Works easily, permits service from the ground, cuts maintenance, no gaskets are necessary—and there's no increase in price!

2. U-shaped metal end fits right under the Autolatch. Tilting the stick outward slightly releases the latch, and the glassware swings down **(3)**. (The U-shaped attachment fits the reverse end of your regular lamp stick).

4. Glassware is easily unhooked and replaced. Precisely engineered parts fit smoothly. No gaskets. No screws! It's a 3-second job with the Autolatch—and **(5)** swinging up the glass snaps the Autolatch shut.

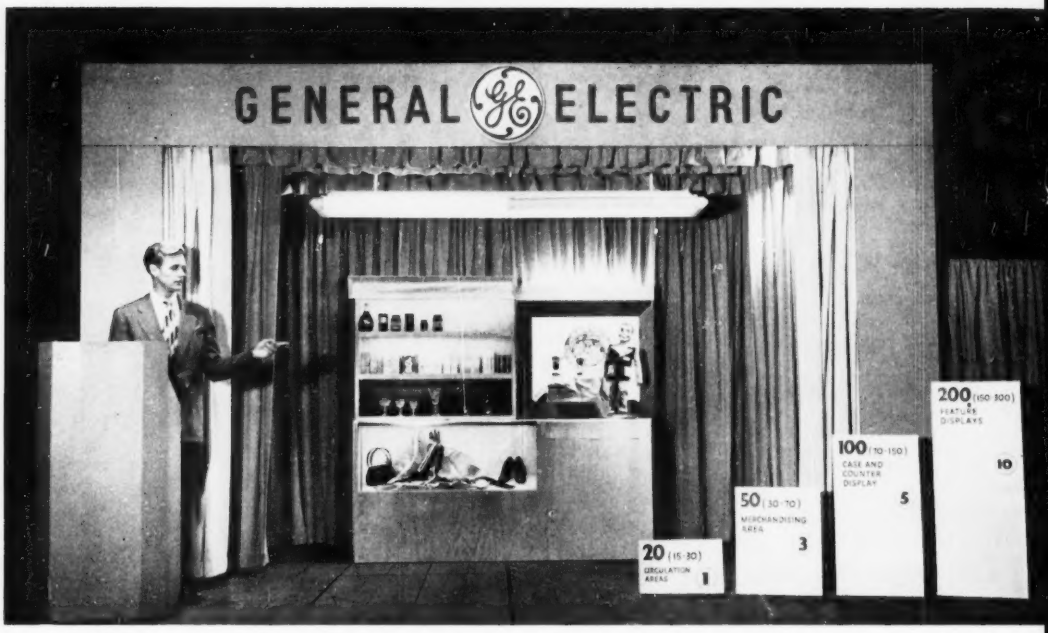
4

5

LM LINE MATERIAL Street Lighting

Complete Coordinated Equipment for All Distribution Requirements

7381



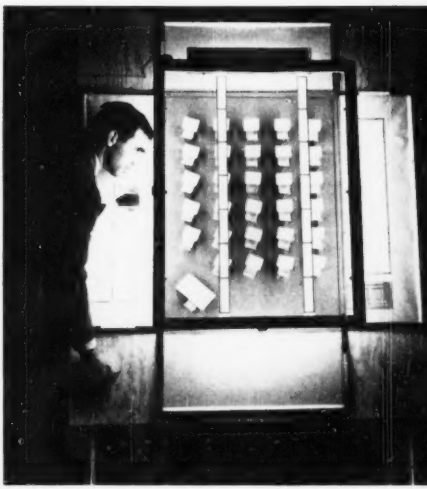
STORE LIGHTING demonstration display is designed to show merchants the many ways light can help sell merchandise. The display, combining portability and flexibility, includes actual size store elements such as: show case wall case, display niche, various lighting fixtures, and even merchandis

GE's Traveling Lighting Cli

THE NEWEST LIGHTING techniques and demonstration facilities of the General Electric Lighting Institute at Nela Park are to be made available to all electric utilities. The conveying vehicle will be the GE Traveling Lighting Clinic which will be ready to take to the road next January.

The clinic is designed to acquaint specific groups throughout the country with lighting information and equipment best suited to their needs. It will include such phases of lighting as residential, commercial, industrial, and school. The complete clinic will take at least three days, but the program is such that groups need attend only the sessions in which they are interested. While a GE lighting engineer and his assistant will accompany each clinic and the local GE Lamp Department lighting engineer will assist, the success of the clinic will depend upon the local utility which is sponsoring it. The lighting sales staff of the utility will make some of the talks and will make the contacts with the local groups such as contractors, architects, consulting engineers, women's organizations, merchants, industrial executives, and school officials.

GE's main contribution will be the proper setting for sales presentations plus the carefully organized programs for selling lighting effectively to widely diversified groups of potential customers.

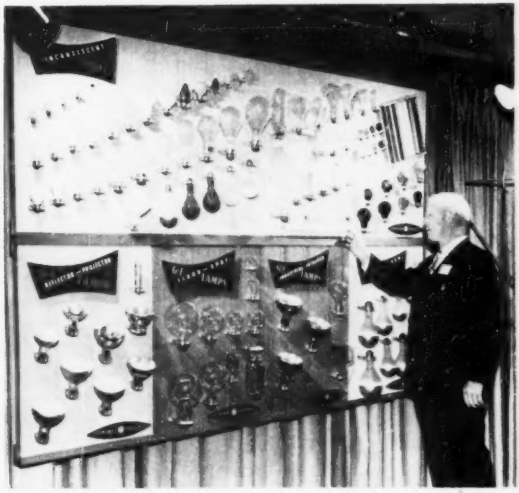


LIGHTING layouts on transparent sheets of plastic are used to simulate good and bad lighting systems in the always popular miniature schoolroom

CLINIC DISPLAYS as they were set up at Cleveland for a press preview, but the press was given only a sample of the clinic program which takes three days to complete. Like most of the clinics already scheduled by utilities, preview was held in a hotel which offered all the many facilities needed

—An Aid to Better Selling

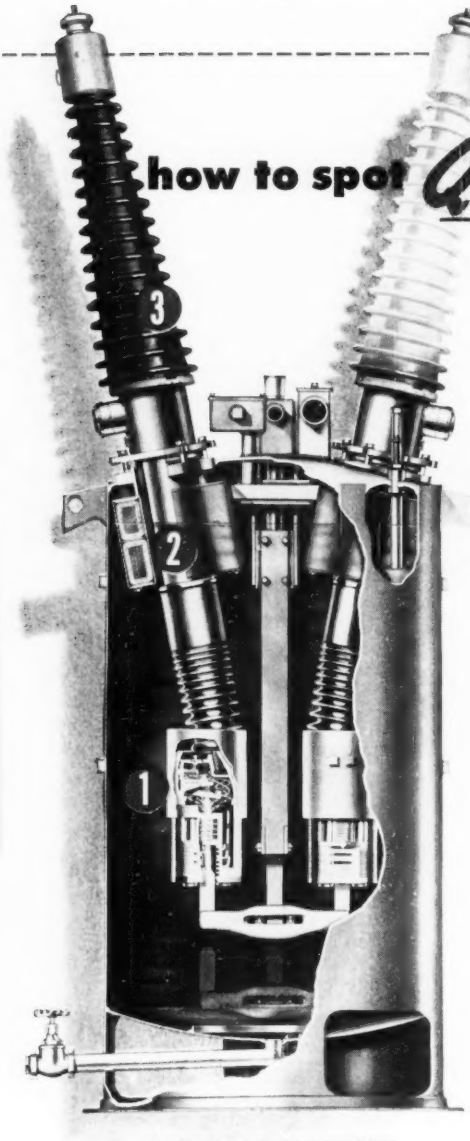
ONE OF THE DISPLAYS of lighting fixtures which are an important part of the clinic. Most manufacturers were quite willing to display their lines



GENERAL ELECTRIC did not neglect its own products as this exhibit of lamps shows. This is only a few of the many types of lamps GE makes

YOU CAN BE **SURE**.. IF IT'S

Westinghouse



TYPE GM OIL CIRCUIT BREAKER

how to spot *QUALITY* in a power circuit breaker

Here is the inside story of speedy, reliable circuit breaker operation. It's the reason why Westinghouse Type GM Circuit Breakers provide shorter arcing time, reduced arc energy, lower maintenance, longer life.

1. Multi-flow "De-ion" grids provide efficient arc interruption. Pressure generated in short, upper arc drives oil to extinguish lower arc—quickly.
2. Bushing-type current transformers, or linear couplers, provide reliable relaying and bus differential protection—with no additional space requirements.
3. Type "O" condenser bushings combine high mechanical, electrical and thermal strength. Complete impregnation and uniform voltage distribution insure extremely low losses.

These are a few of the reasons why you'll get better service continuity and greater system stability with the Westinghouse Type GM Oil Circuit Breaker. Ask your near-by Westinghouse representative for complete details and booklet B-4012. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

J-60712

Westinghouse

POWER CIRCUIT BREAKERS

Energy Output Rebounds As Major Strikes End

With the end of the coal and steel strikes, electric energy output rebounded during the week ended Nov. 19.

Light and power companies in the United States distributed 5,644,435,000 kwhr, or 0.3% more than the amount distributed in the corresponding week last year, 5,626,900,000 kwhr. Output for the week of Nov. 19 represented a sharp jump from that of the week before, when the figure was 5,434,555,000 kwhr.

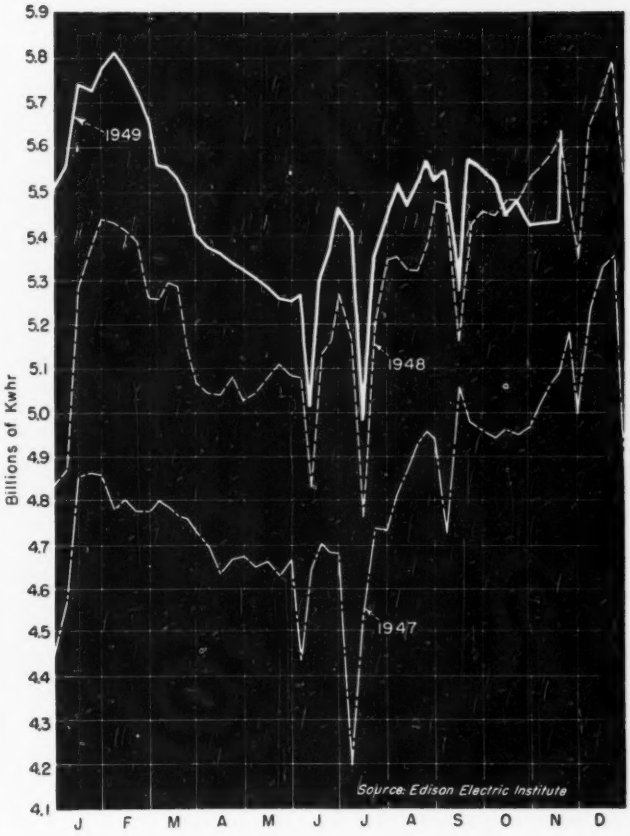
Pacific Coast energy production declined from the corresponding period of the year before for the first time in several years. This shift was attributed to unseasonably warm weather in Oregon. The Central Industrial area, where output fell far below 1948 during the strikes, began to recover in the week of Nov 19. Output there was only 2.7% below the equivalent week of 1948.

Weekly Output, Millions Kwhr

1949	1948	1947
Nov 19 5,644	Nov 20 5,627	Nov 22 5,180
Nov 12 5,435	Nov 13 5,571	Nov 15 5,084
Nov 5 5,435	Nov 6 5,564	Nov 8 5,057
Oct 29 5,433	Oct 30 5,555	Nov 1 5,009
Oct 22 5,430	Oct 23 5,539	Oct 25 4,964
Oct 15 5,481	Oct 16 5,482	Oct 18 4,946
Oct 8 5,450	Oct 9 5,482	Oct 11 4,958
Oct 1 5,521	Oct 2 5,449	Oct 4 4,935
Sept 24 5,556	Sept 25 5,461	Sept 27 4,956
Sept 17 5,579	Sept 18 5,426	Sept 20 4,977
Sept 10 5,258	Sept 11 5,166	Sept 13 5,053
Sept 3 5,544	Sept 4 5,470	Sept 6 4,721

Percent Change from Previous Year

	Nov 19	Nov 12	Nov 5
New England	+ 5.5	+ 3.7	+ 2.9
Mid-Atlantic	— 0.6	— 2.2	— 0.3
Central Industrial	— 2.7	— 9.7	— 9.2
West Central	+ 5.0	+ 0.9	+ 2.4
Southeast	+ 2.6	— 2.1	— 1.5
South Central	+ 5.9	+ 7.4	+ 3.9
Rocky Mountain	— 3.7	+ 0.1	— 3.7
Pacific Coast	— 0.2	+ 2.0	+ 0.6
Total United States	+ 0.3	— 2.4	— 2.3



2 South Carolina Utilities Propose Merger to PSC

Merger of South Carolina Power Co with South Carolina Electric & Gas Co has been proposed to the Public Service Commission in a move to unify operations and to strengthen the corporate structure.

Following the merger it is proposed to refund present outstanding bonds of the two companies with a $22-million issue which will include some new money. Indications are that the company will make a new offer of common stock, probably to stockholders, with any stock not subscribed to be offered to other investors.

Because there are now more than 30,000 stockholders of South Carolina E&G, it is proposed to keep this name for the consolidated company, at least for the next few years.

MEETINGS

American Society of Mechanical Engineers
Annual Meeting, Hotel Statler, New York, N. Y., November 28-December 2.

Exposition of Chemical Industries
Grand Central Palace, New York, N. Y., November 28-December 3.

American Society of Refrigerating Engineers
Annual Meeting, Edgewater Beach Hotel, Chicago, Ill., December 4-7.

★Interstate Power Club of New York
December Meeting, Hotel Martinique, New York, N. Y., December 12.

American Society of Agricultural Engineers
Winter Meeting, Stevens Hotel, Chicago, Ill., December 19-21.

National Farm Electrification Conference
Stevens Hotel, Chicago, Ill., December 20-22.

Canadian Electrical Association
Annual Winter Conference, Chateau Frontenac, Quebec, January 16-18.

Plant Maintenance Show and Conference
Auditorium, Cleveland, Ohio, January 16-19.

Southwest Air Conditioning Exposition
Hall of Agriculture and the Poultry Building, Fair Park, Dallas, Tex., January 23-27.

American Society of Heating and Ventilating Engineers
Annual Meeting, Adolphus and Baker Hotels, Dallas, Tex., January 23-27.

American Institute of Electrical Engineers
Winter General Meeting, Hotel Statler, New York, N. Y., January 30-February 3.

★Edison Electric Institute
Electrical Equipment Committee, Netherlands-Plaza Hotel, Cincinnati, Ohio, February 13-14; Industrial Relations Committee, Palmer House, Chicago, Ill., February 16; Transmission and Distribution Committee, Statler Hotel, Detroit, Mich., February 20-21.

★Pennsylvania Electric Association
Transmission and Distribution Committee, Penn-Harris Hotel, Harrisburg, Pa., February 16-17.

★American Society for Testing Materials
Committee Week and Spring Meeting, Hotel William Penn, Pittsburgh, Pa., February 27-March 3.

★ Additions This Week

Frank Jewett Dies

Dr Frank B. Jewett, former president of Bell Telephone Laboratories, died Nov 18 in Summit, N. J.

IN THE INDUSTRY

FISCHER BLACK

READING THE NEWS story, "Results of Los Angeles Municipal Survey Challenged by Department," in the Nov 5 issue of ELECTRICAL WORLD, one would get the idea that a new twist had been given to the sales promotion picture. The story relates that in a report to the Los Angeles Department of Water and Power, the engineering firm of Ford, Bacon & Davis recommended a $1.2 million reduction in major appliance promotion expenditure. It said also because there is "little industrial property available in Los Angeles, and because the possible power revenue and profit will not warrant this type of promotion or the amounts currently expended for this work," further promotion of industrial sales is undesirable.

Since this recommendation appears so opposite to the growing sales consciousness of the power companies, investigation was made into the report itself. If one were looking for support for the impression created by the foregoing paragraph, plenty could be found in the report. For instance:

"Since 1940 the Department's power system has been the only public supplier of electric energy in the City of Los Angeles. Every home or every business or industry that needs electricity must come to the Department, and it is wasted effort to pay salesmen to solicit business on this basis . . . For the present and foreseeable years ahead there will be no need for promotion of the sale of electricity in Los Angeles. The only services required by an organization such as the Business Agents Division is to provide satisfactory and courteous answers to customers and prospects relative to various types of electric services provided. But it is unnecessary and undesirable to continue to spend the amounts of money that have been spent in the past for solicitation of business."

But these quotations from the report only prove that frequently it is misleading to take statements out of context. Further investigation showed that the FB&D engineers, taking into their consideration only bare facts and figures as is the usual habit of engineers, had calculated unit promotion costs and had come up with such, to them, extravagant figures as $100 or more for each electric range and water heater added to the lines. And they concluded that such costs could not be justified by the results of the promotional effort, a present saturation of 7% in ranges and 3% in water heaters.

They made a comparison of the Department's promotion expense with those of 10 other major utilities. They found that in percentage of gross revenue, promotion was costing the Department more than it was any on the list, except two. And the conditions in which these two utilities operated were greatly different from those of the Department. On such evidence as this plus the competitive advantage of natural gas, the engineers recommended a material reduction in promotion expense.

It is quite possible that Ford, Bacon & Davis went too far in their recommendations, did not take into sufficient or any account the intangible considerations that are so large a part of the reasons for any promotional activity. And it is certain, as is proven by the excerpts quoted here, that with intention of emphasis they used rather strong expressions. But, for the record it should be said that we know that FB&D are not against sales promotion, only against what they think is spending too much money on it. And that is always a matter for argument.

TECHNICAL NOTES

ARCHER E. KNOWLTON

Bushing test and reconditioning over 8 years cost one utility an average of $25 each. New bushings would have cost an average of $140 apiece.

Marine fouling of condenser intakes is being removed by reversing the intake and discharge flows by means of gates provided for the purpose; the warmed water removes mussels, barnacles and hydroids.

Emergency communication between two points 175 miles apart was established by relaying the information through 6 mobile radio cars and trucks spotted along the route.

Thermocouples are potential as large power generators at phenomenally high thermal conversion efficiency if the resistance and created voltage can be advantageously low and high respectively.

Substation structures are expensive to paint if the painters have to return 2 or 3 times to paint the only sections which can be de-energized at any one time.

Noise from all types of equipment—motors, fans, transformers—seems to be more pronounced as speeds are increased or magnetic material is worked at higher density. Some of the saving in cost may be absorbed in noise correctives.

Lubricant that hardens by age or low temperature is hardly appropriate for airbreak switches.

Ice and snow will be melted electrically on the renovated Brooklyn Bridge if plans are accepted. At 40 w per sq ft, six 10-ft lanes, 6,000 ft long, the load would be 16,000 kw or $160 an hour—half that much for the 20-w sufficiency near 32 F.

MANUFACTURERS and MARKETS

WELDING ALUMINUM PLATE in an upright position is easy with this newly developed welding gun. Filler metal is fed automatically from spool at right. Argon or helium gas, also fed to the gun, shields molten aluminum from air and eliminates need for fluxes, electrode coatings, and slag removal. Power may be supplied by a standard welding generator

New Welding Process Developed for Aluminum

A new process for industrial and job welding of aluminum has been developed by the Air Reduction Sales Co in research conducted at its Murray Hill, N. J., laboratories and at Battelle Institute, Columbus, Ohio.

Termed Aircomatic, the gas shielded metal arc welding process utilizes a pistol-shaped welding tool through which filler metal in wire form is fed at controllable rates of speed. The filler metal carries the welding current. A sheath of argon or helium gas surrounds the arc and prevents air from coming in contact with the molten metal.

The process joins aluminum plates $\frac{1}{8}$ to 3 in. or more in thickness. Speed is reported to be at least four times greater than any previously known process of welding aluminum which produces welds of equal quality. This method, according to the announcement, requires less skill than present methods of fusion welding of aluminum and is adaptable to semi-automatic and machine operation. No solid fluxes are required. There are no slags to be cleaned from weld joints, and the welder's work is not interrupted to change electrodes. Welds can be made in any position—flat, horizontal, vertical, or overhead.

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Permanente Renamed; Now Is Kaiser Aluminum

Permanente Metals Corp has changed its name to Kaiser Aluminum & Chemical Corp to achieve a closer identification with its principal products, Kaiser Aluminum and Chemicals. The corporation's wholly owned sales subsidiary, Permanente Products Co, will be renamed Kaiser Aluminum & Chemical Sales, Inc.

The board of directors also has declared a quarterly dividend of 30¢ a share, payable Nov 30 to stockholders of record Nov 15.

Kaiser Aluminum orders received for November have set a record, Henry J. Kaiser, president, told the annual stockholders' meeting. The total volume of aluminum to be shipped this month will be the greatest for any month in the company's three-year history.

Commercial sales of Kaiser Aluminum rose approximately 60% in September, and October volume rose more than 35% above September. October production of electrical conductor was 4.5 million lb.

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Electrical Manufacturers Fined in Anti-Trust Case

Ten electrical equipment companies were fined a total of $40,000 in federal court in Los Angeles recently on their no contest pleas to criminal anti-trust charges.

The companies were indicted on charges of uniform bidding and collusive pricing practices in the Pacific Coast area. In a companion civil case the companies signed a consent decree that would enjoin further violations.

Fined $5,000 each were General Electric Co, Westinghouse Electric Corp, Delta-Star Electric Co, Pacific Electric Manufacturing Co, and Railway & Industrial Engineering Co. Fined $3,000 each were A. B. Chance Co, Cole Electric Co, Electrical Engineers Equipment Co, Hi-Voltage Equipment Co, and Southern States Equipment Corp.

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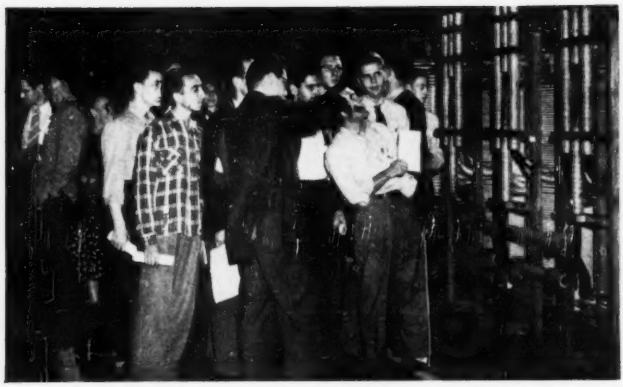
Allis-Chalmers' 9-Month Profit Up 40% over 1948

Allis-Chalmers Manufacturing Co's profits for the first three quarters of 1949 were more than 40% above those for the same period last year.

Production curtailment resulting from the steel strike may cut fourth-quarter profits, however. "Just how soon we and our suppliers can return to regular production schedules is problematical." Walter Geist, president, said, "and our earnings in the next quarter will no doubt reflect this curtailment."

Net earnings for the first nine months this year totaled $13,493,658, equal to $5.02 a common share after deducting preferred dividends of $876,001. For the same period last year they were $9,869,512, or $3.58 a share.

Third quarter profits this year fell below those for the second quarter but still were slightly above the equivalent period last year. Net earnings for the third quarter of 1949 were $3,616,230, equal to $1.32 a common share after deducting preferred dividends of $292,001. For the second quarter they were



ELECTRICAL ENGINEERING students from the University of Pittsburgh and Carnegie Institute of Technology hear Arnold Fox, Pennsylvania Transformer Co engineer, discuss the finer points of transformer construction during the company's open house held in connection with the statewide celebration of Pennsylvania Week. More than 3,500 persons visited the plant, which shipped over a quarter of a million dollars worth of transformers that day

$4,999,445, or $1.87 a common share, and for the third quarter of 1948, $3,562,854, or $1.30 a share.

Billings for the nine-month period amounted to $270,454,453 and bookings $232,752,620, compared to $225,512,784 and $221,465,590, respectively, for the first nine months of 1948. Third quarter billings in 1949 were $80,181,711, compared to $78,998,158 last year, and bookings were $67,006,949, compared to $73,953,789 in 1948.

Unfilled orders as of Sept. 30, 1949, amounted to $110,576,632, as compared to $123,751,394 on June 30, 1949, and $165,506,027 on Sept. 30, 1948.

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$750 Million Appliance Market Seen on Farms

A three-quarter-billion-dollar market for electrical appliances will be provided by the approximately five million American farm families that will be receiving electric service by the end of 1949. This estimate is based on the results of a sampling survey recently completed by Edison Electric Institute's Farm Section.

Interviews with 2,377 farm electric customers and 293 other rural customers in 19 states representing every section of the country indicate an average retail market for appliances of about $150 a customer. The survey, conducted by 26 operating companies, shows that more than 40 different types of electrical equipment are desired immediately.

Home food freezers, electric water systems, and electric ranges lead in demand. The survey, projected on the basis of the total number of electrified farms, indicates nearly a quarter of a billion dollars in retail demand for food freezers and more than $90 million for pumps in water system installations.

Forty-one percent of rural electric customers already cook with electricity, but an additional 12% want electric ranges now. Fourth in demand are electric water heaters, representing about $70 million in sales for electric appliance dealers. More than $55 million worth of new electric refrigerators is also indicated, although about 85% of farm customers already have them.

The survey indicated that 36% of farm electric customers cook with wood, coal, oil, or kerosene, while 23% cook with bottled gas. Some farms use two sources of fuel. Wood, oil, coal, or kerosene is used by 45% to heat water, while 15% use bottled gas.

Electric water systems are being used by 65%, with an additional 15% using some other type of running water system. But only 53% of these rural customers had a bath or toilet, and only 62% were using running water in the kitchen.

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New Sales Assignments

Electrical manufacturing companies have appointed the following sales representatives:

Line Material Co. Milwaukee, has opened a new sales office and warehouse at 1169 Morehead St, Memphis 7. W. E. Goodman, Memphis district manager, will supervise this branch.

Leland Electric Co. Dayton, O., has appointed C. J. Perrier, 1630 Hanna Building, Cleveland, as northeastern Ohio sales representative.

Superior Electric Co. Bristol, Conn., has named R. J. Caccavelli manager of its Chicago sales office. Until permanent quarters are established in downtown Chicago, Caccavelli will operate through Post Office Box 48, Oak Park, Ill. He will handle the complete line of Superior Electric voltage control equipment.

Jeffrey-Dewitt Insulator Corp, Kenova, W. Va., has appointed the following new district representatives: Carlton Cooley, 249 Edgar Road, Webster Groves (St. Louis 19), Mo.; Hal C. Paul, Plymouth Building, Minneapolis 2; C. G. Anderson, 14 East Jackson Blvd, Room 1521, Chicago 4; and H. Jack Belcher, 409 West Adams Ave, Jacksonville 1, Fla.

John A. Roebling's Sons Co. Trenton, N. J., has opened its new Denver office and warehouse at 4801 Jackson St. Homer H. Davis will serve as manager, with Roy H. Hainsworth as his assistant. Fred L. MacLean will be in charge of oil field sales.

Graybar Electric Co. New York, has named Hamilton Corey branch manager at Charlotte, N. C. He succeeds Y. P. King, who is retiring.

R. E. Uptegraff Manufacturing Co. Scottdale, Pa., has made Slaybaugh-Thompson Co, 100 West 13th St, Denver 4, its agent for the sale of transformers in Colorado, Wyoming, Utah, and New Mexico.

La Salle Lighting Products, Inc. Buffalo, N. Y., has appointed Sundre & Wood, Inc, Atlanta, Ga., to represent it in Tennessee, North and South Carolina, Alabama, Georgia, Mississippi, and parts of Kentucky and Florida. Sundre & Wood will handle sales of portable, wall-insert, and wall-attachable electric space heaters and wall lamps.

General Electric Co has appointed three new district managers for its Lamp Department. John R. Colville, Jr., will direct the Indiana sales district, with headquarters in Indianapolis. Joseph M. Lime will have his headquarters in North Kansas City, Mo., where he will be Midwest district sales manager. Warren P. Thayer has been made manager of the Allegheny sales district, with headquarters at Pittsburgh, effective Dec 1.

Delta-Star Electric Co. Chicago, has appointed A. J. Elggren & Sons Co, 428 South West Temple St, Salt Lake City 13, as its district representative in Idaho and Utah.

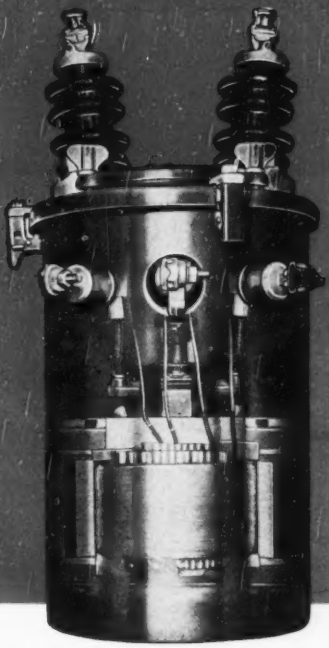
Independent Pneumatic Tool Co. Aurora, Ill., has named new managers at its sales and service branches in Denver and San Francisco. Eugene C. O'Connell is the new manager in San Francisco and Charles H. Gabriel in Denver.

Cannon Electric Development Co. Los Angeles, has named Frank W. Taylor Co, 4508 East Genesee St, De Witt (P. O. Box 316), N. Y., to handle the company's connector lines in Schedule A. Taylor will cover all New York counties north of Ulster, Sullivan and Dutchess, replacing Lewis & Sachs Co. R. T. Sachs Co, Williamsville, N. Y., will continue to handle electrical specialty items in Schedules B, C, and D in the same territory.

MOLONEY

HiperCore

DISTRIBUTION TRANSFORMERS



15 TO 30% LIGHTER

SMALLER SIZE

GREATER SHORT-TIME OVERLOAD CAPACITY

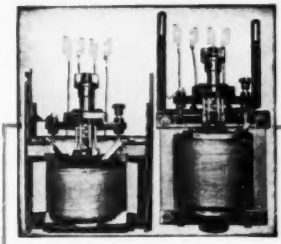
BETTER VOLTAGE REGULATION

Moloney HiperCore Transformers have cores of cold-rolled, high permeability, oriented silicon steel. The improved characteristics of this core material make possible reductions in transformer size and weight, better voltage regulation and increased short-time overload capacity.

Reductions in size and weight range from 15% to 30%. Because they are smaller and lighter, HiperCore Transformers are more easily and quickly installed on the poles . . . are easier to handle and take up less space on the line truck and in the storeroom.

Through lower impedance, better voltage regulation is possible at all loads with HiperCore Transformers. This means greater customer satisfaction . . . because of reduced secondary voltage fluctuations during sudden or intermittent load changes . . . and because of decreased voltage drop during peak load periods.

HiperCore Transformers have improved short-time overload characteristics which provide better peak load performance and longer life. Reduced coil mass, together with extensive use of cooling ducts, results in more rapid cooling of the windings and in a lower hottest-spot temperature gradient.



HiperCore core-and-coil unit and conventional type core-and-coil unit. Both are rated 3 Kva, 12470 Gr. Y/7200-120/240 volts. Smaller size of HiperCore unit achieved by use of wound cores made of high permeability, oriented, silicon steel.

MOLONEY ELECTRIC COMPANY

Sales offices in all principal cities

FACTORIES AT ST. LOUIS 20, MO., AND TORONTO, ONTARIO, CANADA

QUALITY CONTROL DATA SHEET

SYLVANIA FLUORESCENT LAMPS

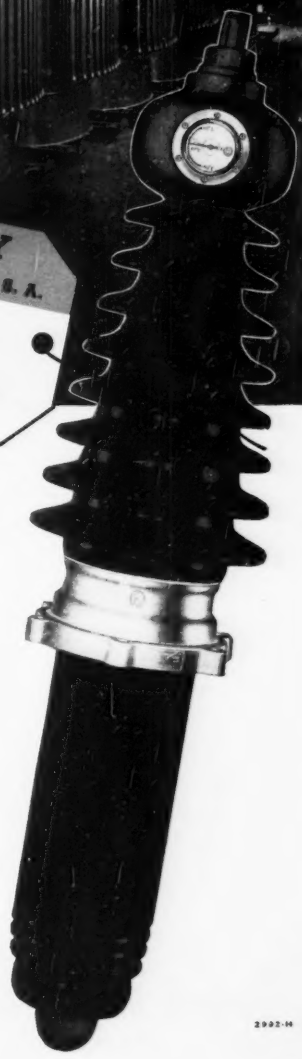
YES, every fifteen minutes, extensive tests are made on samples of every coated part that goes into the construction of Sylvania Fluorescent fixtures.

For example, as the reflectors emerge from the baking ovens, the Miracoat finish is subjected to tests for hardness, ahdesion, elasticity and other important properties. In the hardness test illustrated above, prods of pre-determined hardness are pushed along the surface at a 45° angle. If the Miracoat finish scratches at a degree of hardness below the minimum acceptable figure, the entire batch is rejected. It is tests like this that have made the name *Sylvania* famous for unsurpassed quality in fluorescent fixtures. For information on the entire line, write Sylvania Electric Products Inc., Advertising Dept. L-8411, 500 Fifth Ave., New York 18, N. Y.

SYLVANIA ELECTRIC

FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES, SIGN TUBING, LIGHT BULBS, PHOTOLAMPS, RADIO TUBES, CATHODE RAY TUBES, ELECTRONIC DEVICES

These eight new Pennsylvania transformers will soon go into service. Some of the particulars indicating advanced design, as emphasized by the manufacturer, are: "Special base arrangement for convenient handling--auxiliary compartments, permanently welded to each tank and interconnected to each other and to the main oil supply by tubing, form the inert gas-oil seal system of oil preservation--rating per unit, 500 kva, 60 cycle, 55 degree C temperature rise; high side, 33,000 x 66,000 volts, intermediate, 7,620/13,200 volts Y, low, 2,400 volts--permanently welded Uni-Row radiators--straight line tap changers, and . . ."



BUSHINGS

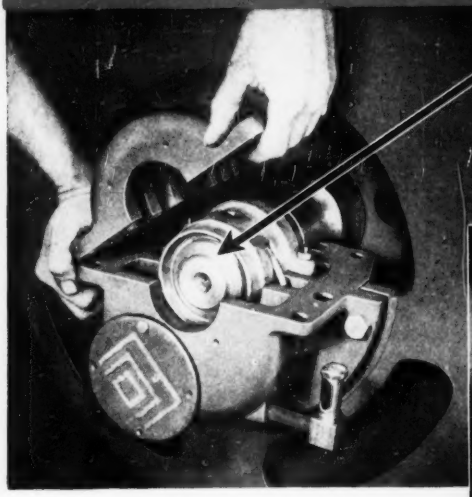
ONE OF THE FINEST COMPONENTS
OF ANY TRANSFORMER

Ohio Brass

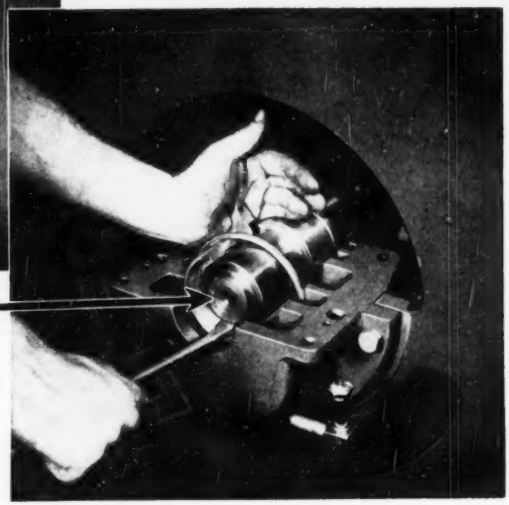
MANSFIELD, OHIO

2902-H

How's this for accessibility!



TO GET AT A BEARING ON THE ELLIOTT FABRI-STEEL MOTOR (FOUR OR MORE POLE) there's no need to take things apart in a big way. Simply back off four cap screws and two dowels in the bearing cap, take it off, remove bearing dowels and lift off the upper half of the split sleeve bearing.



THE LOWER BEARING HALF comes out just as easily. With a pry bar under the boss on shaft end, raise shaft enough to take weight off lower half of bearing, roll it around to top of shaft, take it out from under the oil ring. On the coupling end, free the bearing by using a jack or rope sling under the coupling hub. The whole job takes ten or fifteen minutes—no more.

OUTSTANDING FEATURES OF THIS ALL-STEEL MOTOR

- The enduring strength of steel —
- Uniform air gap for maintained performance —
- Split-sleeve bearings for easy access —
- Dynamically balanced rotor for vibrationless operation —
- Rotor removable without taking off bearing bracket at coupling end of motor.

This line of big, all-welded steel motors was designed with many new features that simplify maintenance as well as making a lot less of it necessary. Stators are built up and actually made a part of the steel frame by welding, making a one-piece, permanently tight and rigid unit. Bearing brackets too are of steel, stiff and unyielding, maintaining the relative positions of rotor and stator without change or variation in air gap. It's a new way to build motors and it's making engineers happy in many plants where these motors are setting new standards in smooth, quiet, vibrationless operation.

Built in smallest frame, 125 hp 14 pole, up to largest frame, 3000 hp 4 pole—drip-proof, splash-proof, enclosed self (pipe or base) ventilated, enclosed separately (forced) ventilated, enclosed self ventilated with built-in coolers. Write for bulletin PB 7000-2.

ELLIOTT COMPANY
DEPT. EN • RIDGWAY DIVISION • RIDGWAY, PA.
Plants in JEANNETTE, PA. • RIDGWAY, PA. • AMPERE, N. J. • SPRINGFIELD, O.
NEWARK, N. J. • *DISTRICT OFFICES IN PRINCIPAL CITIES*

L783a

Elliott FABRI-STEEL Motors

NEWS ABOUT PEOPLE

L. M. SMITH

E. C. EASTER

F. S. KEELER

J. M. Barry Heads Alabama Power Co; Martin Chairman; 4 Others Advance

(See Front Cover)

James M. Barry has been elected president of Alabama Power Co to succeed Thomas W. Martin, president since 1920. Martin was named chairman of the board, a newly created position.

The directors also elected Lewis M. Smith to succeed Barry as general manager and named E. C. Easter vice-president in charge of sales. F. S. Keeler was chosen vice-president and manager of the Mobile division, succeeding A. D. Quackenbush, who has retired after 42 years in the utility field.

Barry has been vice-president of the company since 1926 and general manager and a director since 1932. After experience with the Electric Department of the City of San Francisco and with Northwestern Electric Co, Portland, Ore., he joined Alabama Power in 1918 as local manager of its Anniston operations and later manager of the eastern division. He became chief engineer in charge of construction of the Mitchell Dam project in 1921, southern division manager at Montgomery in 1923, and manager of retail operations the same year.

Smith, vice-president since 1945 and elected a director this year, joined the utility's engineering department in 1923 as a draftsman. He was chief electrical engineer from 1939 to 1944, when he became manager of the public relations department.

Easter, who has been sales manager since April, became associated with Alabama Power in 1924, when, as an agricultural engineer, he was assigned by Alabama Polytechnic Institute to work with the company on a project to determine the uses to which electricity could be put on the farm. In 1927 he became chief agricultural engineer for the utility and in 1933 manager of the rural and towns division.

Keeler, a vice-president since 1945, was employed by New York Edison Co before going to Mobile Electric Co in 1919. He became superintendent of the meter department and in 1923 assistant general superintendent. After Mobile Electric's acquisition by Gulf Electric Co and later by Alabama Power, Keeler was made division superintendent in 1927 and in 1943 was appointed Mobile district manager and assistant to the division vice-president.

Martin joined James Mitchell, founder of Alabama Power, when the latter went to the state to look over sites for possible power development. After several years as general counsel, Martin was elected a vice-president and became president in 1920.

Quackenbush went to Mobile in 1907 as an engineer for H. M. Byllesby & Co, which controlled Mobile Electric. Later the Mobile utility appointed him assistant superintendent, general superintendent and manager, and in 1925, when the company was absorbed by Alabama Power, vice-president.

OBITUARY

James E. Davidson

James E. Davidson, 70, general manager of Omaha Public Power District, died Nov 12 after a heart attack.

A 50-year veteran of the electric utility industry, Davidson was 1925-26 president of the National Electric Light Association, launching a national drive

JAMES E. DAVIDSON

for greater sales of electrical appliances. He continued the campaign the next year as chairman of NELA's Commercial Section. The organization's National Lighting Educational Committee, of which he was chairman in 1924 and 1925, sponsored the Better Home Lighting Contest in which 4,817 cities and towns in the United States and Canada were organized. He also was first chairman of NELA's Public Relations Committee in 1920 and chairman of its Wiring Policies Committee in 1928.

Davidson served two terms as president of the Association of Edison Illuminating Companies, in 1937 and 1938, and was a member of its Executive Committee from 1940 through 1945. He also was a vice-president and later a trustee of Edison Electric Institute and national chairman and a member of the Executive and Public Policy Committees and of the Advisory Council of the Electric Refrigeration Bureau.

Davidson began his utility career with Port Huron (Mich.) Power & Light Co at the age of 20. He headed Consolidated Light & Power Co, Montpelier, Vt., and Pacific Light & Power Co, Portland, Ore., before going to

Omaha in 1917 as vice-president and general manager of Omaha Electric Light & Power Co, later Nebraska Power Co. He became Nebraska Power president in 1928 and when the utility became publicly owned in 1946 was named general manager.

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Peter Diederich

Peter Diederich, 68, superintendent and chief engineer of the Glendale, Calif., Public Works Department and a city employee for 40 years, died Nov 1 following a heart attack.

Diederich entered the electric utility field in 1906, working for Southern California Edison Co and with the Municipal Light & Power Co, Pasadena. He became superintendent of construction and operations of a municipal system serving 190 customers in the Glendale area in 1909. In 1913 the town took over operation of the water system, and Diederich was made manager of both operations in 1919. Under his management the municipal grew to a $21-million business employing approximately 300 persons and serving a population of 104,000.

Howard E. Gulick, engineer and executive assistant to Diederich, has been granted an interim appointment to fill the vacancy. Gulick has been with the department since 1935 except for army service.

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James R. Hobbins

James R. Hobbins, president of Anaconda Copper Mining Co, died in Butte, Mont., Nov 14 after a heart attack. He had become president of Anaconda, believed to be with its subsidiaries the world's largest copper producer, in 1940.

Hobbins also had been in the electric utility field. In 1912 he joined the commercial department of Great Falls (Mont.) Power Co. Four years later he was made manager of its northern Montana division and of Montana Power Co. He joined Anaconda in 1922 as assistant to the president.

Hobbins also was president of Diamond Coal & Coke Co, Butte Water Co, Andes Copper Mining Co, Chile Copper Co, and Chile Exploration Co.

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Walter N. Cargill, 72, New England representative of Air Preheater Corp, Midwest Piping & Supply Co, Western Precipitation Corp, and other makers of power plant equipment, died at Arlington, Mass., Nov 11. Earlier he had been employed by Stone & Webster Engineering Corp at Boston.

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied

UTILITIES

Proposed Construction

Arizona—Bureau Reclamation, Dpt. Interior, Phoenix, control & building adn. with utilities at Phoenix substation, Davis Dam Proj. Spec. B3-PX-21 (Region 3). L. N. McClellan, Bldg. 1-A, Denver Federal Center, Denver, Colo., ch. engr.

Arkansas—North Arkansas Electric Co-operative, Salem, 28.95 mi. 34.5 kv. line and 4 substations, Fulton Co. Plans deposit $25. Allen & Haskell, 65 McCall Pl., Memphis, Tenn., engrs.

California—State Div. Architecture, P. Wks. Bldg., Sacramento, electric distr. sys. and area lighting and sewer and water services at 36th Agricultural Assn. Anson Boyd, Sacramento, state archt.

Calif., Muroc—U. S. eng., 751 S. Figueroa St., Los Angeles, electric power line and move substation, $150,000. Coll. Luplow, engr.

Kentucky—U. S. Eng., 303 U. S. Court House, Nashville, Zone 1, Tenn., furnishing, del. f.o.b. cars Somerset, Ky., one 15 kv. oilfilled pipe-cable transmission sys., consisting of 6 generator circuits, for Wolf Creek Hydro-electric Power Plant, Cumberland River, Russell Co., CIVENG 40-058-50-15.

Mississippi—Pearl River Valley Electrical Power Assoc., Columbia, 122 mi. rural distr. lines, Marion Co., $122,000. Bowman & Bowman, Greenwood, engrs.

Montana—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Rudyard, outdoor type power transformer, outdoor lightning arresters, grounded-neutral circuit, outdoor distribution, transformer, outdoor circuit recloser, outdoor horn-gap switches, grounding blades, outdoor disconnecting fuses, outdoor disconnecting switches, outdoor fused cutout, outdoor lightning arresters, ungrounded-neutral circuit, outdoor current transformers, potential transformers, metering cabinet, demand meter, circuit breakers, recording voltmeter for Rudyard substation, Fort Peck Proj., Spec. 2832. L. N. McClellan, ch. engr.

Montana—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Shelby, outdoor power transformer, lightning arresters, ungrounded-neutral circuit, grounded neutral circuit, regulating transformer, output capacity, outdoor shunt reactor, distribution transformers, circuit breaker, disconnecting switches grounding blades outdoor-horn-gap switches, disconnecting fuses, current transformers, potential transformers for Shelby Substation, Fort Peck Proj., Spec. 2837. L. N. McClellan, ch. engr.

Tex., Beaumont—Gulf States Utilities Co., 362 Liberty St., generating unit, $400,000.

Tex., Bryan—City, electric distr. sys, $100,000. Freese & Nichols, 407 Daniger Bldg., Fort Worth, consult. engrs.

Tex., Longview—Southwestern Gas & Electric Co., Longview, expansion Knox Lee Electric Power Plant on Lake Cherokee, $8,500,000; electric power transmission lines, $200,000.

Washington—Klickitat County Public Utility Dist. 1, Goldendale, 270 mi. rural distr. lines, Klickitat and Skaminia Counties. Plans deposit $10. Howard Zenier & Assocffi Vancouver, engrs.

Wash., Longview—Cowlitz Public Utility Dist., Longview, second circuit to provide addnl. power for commercial section, $100,000.

Wyoming—Tri-County Electric Assn., Sundance, 710 mi. rural distr. lines, 34.5 mi. transmission lines, sys. imprvs. and completion previously approved construction, Crook Co. $1,338,000. H. S. Nixon Eng. Co., W. O. W. Bldg., Omaha, Neb., consult. engr.

Low Bidders & Contracts Awarded

California—Bureau Reclamation, Dpt. Interior, Redding, completing lower vista house, powerhouse adit., elevator lobbies at Shasta Dam, Central Valley Proj., Spec. 2769, to Haas & Rothschild, 274 Brannan St., San Francisco, Calif., $73,-197. Bids 9/27, awarded 11/7.

Missouri—Ozark Electric Co-operative, A. Claypool Dougherty, mgr., Mount Vernon, 325.32 mi. rural dist. lines, 111.5 mi. conversions in Dade, Greene, Jasper, Lawrence, Christian, Barry and Stone Counties, to Reinhart & Donovan Co., Commercial Exchange Bldg., Oklahoma City, Okla., $533,130. Bids 9/23, under LB.

North Dakota—Tri-County Electric Co-operative, Inc., Carrington; 236 mi. rural distr. lines, Foster Co., to Sorkness Constr. Co., Box 1482, Fargo, $236,618. Bids 8/4.

South Dakota—Central Electric Co-operative, Blunt, 434 mi. rural distr. lines, Hughes Co., to Philard, Inc., Huron, $507,309. Bids 8/30, awarded 10/18.

Tex., Laredo—Central Power & Light Co., 120 N. Chaparral St., San Antonio, electrical power, earth, concrete and steel type reservoir and dam, to Killian & Keller, Sunset Rd., San Antonio, Approx. $276,000. George A. Mills, c/o owner, engr.

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

Proposed Construction

Calif., Los Angeles—Los Angeles Co., 501 Hall of Records, voted $4,500,000 bonds, contagious disease hospital, Paul R. Williams & Adrian Wilson, 3757 Wilshire Blvd., archts.

Calif., San Francisco—Public Utilities Comn., City Hall, voted $10,000,000 bonds terminal, bldg., runway extens., etc., at Mills Field, San Francisco, Airport, near San Bruno, $4,000,000. W. P. Day & Assoc., 111 New Montgomery St., archts.

O., Cleveland—The Standard Oil Co., Midland Bldg., Cleveland, expansion catalytic cracking facilities at Cleveland Refinery No. 1. $4,500,000.

O., Warrensville Heights—Bd. Trustees Cuyahoga County Hospitals, c/o Peter J. Slack, chn., 15210 Onaway St., Cleveland, plans by Walker & Weeks, 1240 Huron Rd., Cleveland, 4 story, brick, steel chronic hospital on Cooley Farms off Warrensville Center Rd. $6,000,000.

Tenn., Camp Forrest—U. S. Dpt. of Air Force, Pentagon Bldg., Wash., D. C., research center for testing faster than sound planes and missiles. Total est. cost $1,000,000,000. ($100,000,000 appropriated to date for wind tunnels, etc.). Sverdrup & Parcel, consult. engrs., Syndicate Trust Bldg., St. Louis 1, Mo., assisted in selecting site.

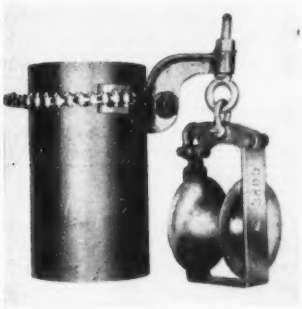
Low Bidders & Contracts Awarded

Calif., Los Angeles—Union Housing Plan Inc., 1500 Lincoln Blvd., 62 stucco apartments, Eckland and Dareen Places, Frederick and Lake Sts., Elkgrove Circle, Penmar Ave. Owner builds, $5,500,000.

Mich., Ann Arbor—Jeffress-Dyer, Inc., 908 20 St. N. W., Wash., D. C., two 10 story bldgs. on 5½-acre tract bounded by Washtenaw Rd. and Stadium Blvd. Owner builds. $1,500,000.

Pa., West Point—Sharp & Dohme, Inc., 640 N. Broad St., synthetics plant and auxiliary facilities, to United Engineers & Constructors, Inc., 1401 Arch St., $2,000,000.

NEW EQUIPMENT



Stringing Sheave

AERIAL CABLE up to 3¾ in. diam can be handled with a 7 in. stringing sheave cast of malleable iron. An oilite bronze bushing that is used is reported to be lubricated for life. The chain fits around the pole to allow positioning by one man.

T. J. Cope, Inc, 711 S. 50th St, Philadelphia 43, Pa.

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Sweep Calibrator

MARKERS at intervals of 0.1, 1.0, 10.0 and 100.0 microseconds are provided in sweep calibrator Model GL-22A for securing accurate time calibration of synchroscopic sweeps. It can be operated in conjunction with any type of oscilloscope having synchroscope or triggered sweep facilities, according to the manufacturer. The markers are suitable for deflection indicating or beam blanking presentation.

A self-contained trigger generator with positive or negative output can be used to drive the calibrator and associated equipment, or it may be triggered externally up to 100 kc. Positive or negative gates of variable amplitude are available for obscuring retrace or timing purposes.

Browning Laboratories, Inc, 742 Main St, Winchester, Mass.

Slotted-Bolt Connector

A SLOTTED-BOLT connector, designated 10 NU, is applicable to No. 10 and smaller conductor in making copper to copper connections. It supersedes a machined connector made from 17% conductivity bronze.

Connector is cold forged of 99.6% conductivity electrolytic copper which the manufacturer claims has the same electrical and physical characteristics as the conductor. Slot width is 0.117 in., effective slot depth is 0.281 in., and diameter of thread is 0.3125 in.

W. N. Matthews Corp, 3850 Delor St, St. Louis 16, Mo.

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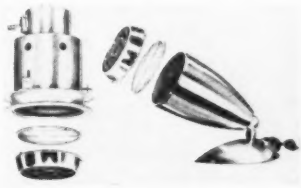

Lamp Fixtures

FIXTURES designated the Midget-Lite line, have been introduced for use with the new 75-w R30 lamps and with 100-w standard lamps. They are claimed to be particularly adaptable for industrial plant, public building, store window, store interior, and museum and theater use.

Models available are: Recessed, portable, screwpin, box plate, and clamp-on. Recessed model is shown at left in illustration, and the portable model is at right. Further details are in Bulletin No. 127.

Swivelier Co, Inc, 30 Irving Place, New York 3, N. Y.

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Truck Grounding Set

A NEW SAFETY DEVICE for the protection of ground crews is designed to ground trucks and construction equipment when in use near substations and high voltage lines.

This equipment grounds the truck bed to a screw ground rod installed near the job and attached to the truck by a long flexible cable. Truck boom is bonded to the bed by two short lengths of cable secured with special clamps. Thus, any current contacting

the boom will be grounded through the grounding set. Ground connection can be made to substation ground, water pipe, or transmission tower if adjacent to the work.

Set consists of four grounding terminals with two 18-in. sections of cable attached, 30 ft of No. 2 extra flexible rubber covered cable, 2 tap clamps and a 6-ft screw ground rod.

A. B. Chance Co, Centralia, Mo.

•

Selector Switch

A MASTER SELECTOR SWITCH, GE3652, for 24-v remote control wiring systems, enables the user to select any one of nine different circuits, and operate them separately or turn on or off all nine circuits with one sweep. Uses of the switch include controlling small motors or groups of lights.

The switch is the rotating type, mounted on an ivory colored switch plate. A single "on" and "off" switch of a normally open spdt momentary contact type also is mounted on the plate.

General Electric Co, Construction Materials Dept, Bridgeport 2, Conn.

ELECTRICAL BUSINESS OUTLOOK

Prices for metals used in electrical equipment are showing mixed trends. Copper is up. But lead has turned down. And the price of steel is still a question mark. Unsettled foreign markets cause much of the confusion in the non-ferrous metals field. Undetermined pension costs are the joker in the steel outlook. One sure bet: There won't be a uniform round of price increases.

In general, the metals markets have strengthened during the fall months. The upswing in business activity caught most fabricators with low stocks. Strikes have cut supplies of both steel and refined copper. It's easy to be bullish on the metals short term. The real question is whether basic demand is strong enough to support more than a temporary price rise.

The demand for copper could weaken appreciably by next spring. Automobile production and industrial construction are among the big markets for the red metal. And both may be down by 10% to 15% in 1950. This would also cut the demand for zinc, copper's mate in brass products. Meanwhile supplies will be eased by renewed production at recently struck plants and probably by increased imports.

Non-ferrous metals prices can react quickly to these changes in supply and demand, as shown by the drop in copper prices last summer. Moreover, these metals are international commodities and are affected by foreign developments. The existence of this international market means domestic prices have to be fairly flexible.

Foreign currency devaluations eventually will mean lower prices from copper producers abroad. By quoting prices in devalued currency, Canada and Rhodesia could make their product cheaper in the United States or Europe. At the same time, devalued European currencies will buy less copper in South America. So Chile, for example, may have to cut its price to meet the European market or sell more in the U. S. Right now strong demand here is holding off this drop in world prices. But any easing in U. S. demand might touch it off.

Recent weakness in lead prices is a good example of how a drop in domestic demand is compounded by the foreign situation. Lead consumption picked up ahead of other metals but has now levelled out. Western hemisphere producers don't want to sell for weak European currency. So more lead is coming into the domestic market. Price is down and may drop further.

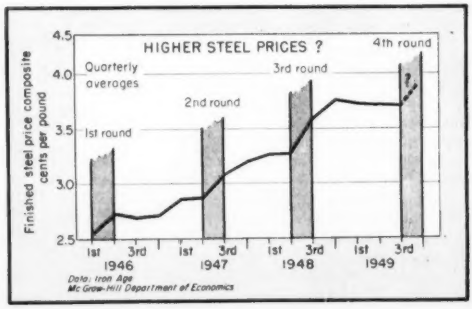
Steel prices, on the other hand, are probably going up. The problem is when, and how much. Steel prices don't fluctuate quickly in response to supply and demand. There's no active international market. And steel consumption depends more on cycles in the capital goods industries than on price considerations. The basic factor in steel prices is costs. And costs have risen considerably.

After each round of wage increases, steel prices have been set higher (chart). Since the last jump in July, 1948, the steel companies have absorbed the following higher costs: 9% in railroad freight charges, $1 a ton on iron ore, 50¢ a ton for coke. Scrap prices dropped to offset these increases but then headed up again. The latest gain adds $3 per ton to scrap costs.

But the big cost increase will be contributions to pension and insurance funds which the steel industry has just agreed to set up. This is the equivalent of a fourth-round wage increase. Estimates run up to $3 per ton of finished steel. For companies which already have pension plans it could be much less.

This means that perhaps some operators could absorb pension costs while the industry operates near capacity. But 80% operation seems a more reasonable average on which to base prices. Moreover, those companies that do not already have pensions, particularly small producers, will be hit with extra payments to fund past benefits and to pay insurance companies' charges.

In the tight supply situation resulting from the strike, some producers seem sure to move for higher prices. The only deterrent is political. Big steel companies may feel compelled to hold the line rather than face a barrage of criticism from Washington. So the increase may be delayed or camouflaged as "extras."



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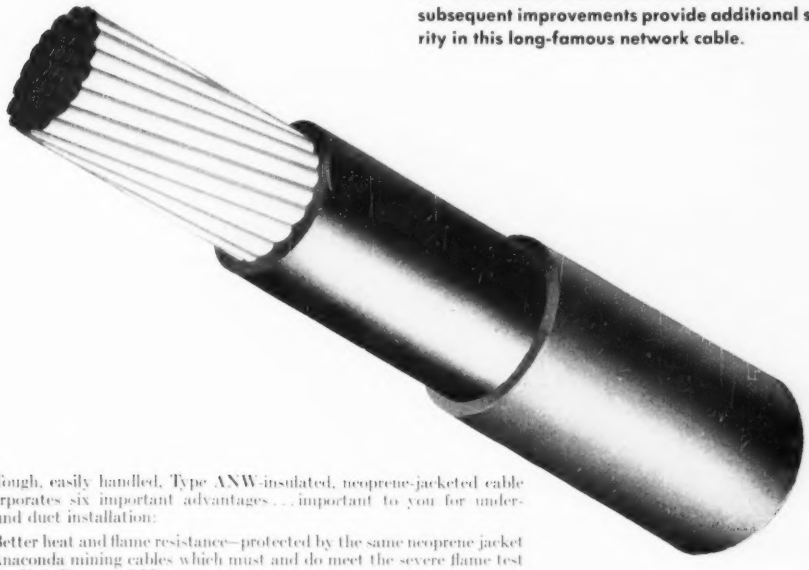

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3. Higher operating temperature—now 75 C copper temperature, continuous duty.

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5. Low moisture absorption—Type ANW insulation has always had low moisture absorption . . . far less than is detrimental to safe operation.

6. More easily handled—passes 180 degree cold-bend test at 0° C without damage to jacket. Cable is lighter, easier to pull. No lead to fuse, insulation and jacket do not support combustion.

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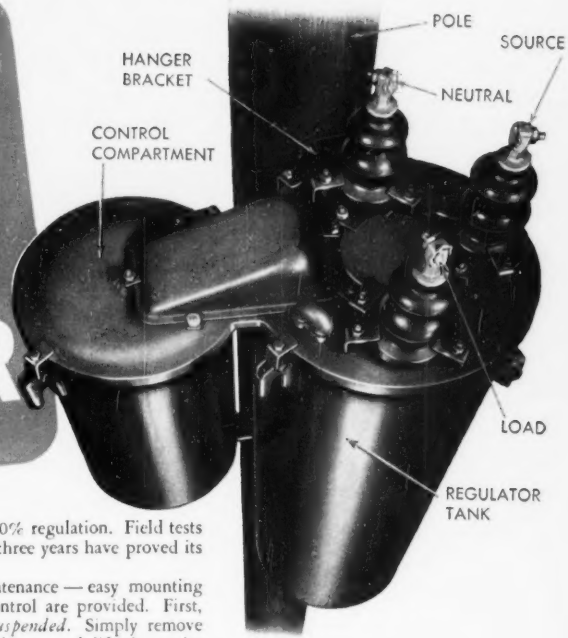

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